USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
Procurement and Supply Management

GHSC-PSM TASK ORDER 2 (MALARIA)

ANNUAL REPORT FISCAL YEAR 2019

OCTOBER 1, 2018–SEPTEMBER 30, 2019

The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project is funded under USAID Contract No. AID-OAA-I-15-0004. GHSC-PSM connects technical solutions and proven commercial processes to promote efficient and cost-effective health supply chains worldwide. Our goal is to ensure uninterrupted supplies of health commodities to save lives and create a healthier future for all. The project purchases and delivers health commodities, offers comprehensive technical assistance to strengthen national supply chain systems, and provides global supply chain leadership.

GHSC-PSM is implemented by Chemonics International, in collaboration with Arbola Inc., Axios International Inc., IDA Foundation, IBM, IntraHealth International, Kuehne + Nagel Inc., McKinsey & Company, Panagora Group, Population Services International, SGS Nederland B.V., and University Research Co., LLC. To learn more, visit ghsupplychain.org

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Acronyms

3PL	third-party logistics
ACT	artemisinin-based combination therapy
ALu	artemether-lumefantrine
AMC	average monthly consumption
ARTMIS	Automated Requisition Tracking Management Information System
ASAQ	artesunate-amodiaquine
BI&A	Business Intelligence and Analytics
BMGF	Bill and Melinda Gates Foundation
CAPeT	Community Accountability Performance Tracking
DFID	United Kingdom Department for International Development
DHIS2	District Health Information Software Version 2
DNPM	National Directorate of Pharmacy and Medicines
DPML	Directorate of Pharmacies, Medicines and Laboratories
DRC	Democratic Republic of the Congo
eLMIS	electronic logistics management information system
EOI	expression of interest
ePOD	electronic proof of delivery
EMMP	Environmental Mitigation and Monitoring Plan
EPIK	Environmental Protection, Information and Knowledge
EPSA	Ethiopian Pharmaceuticals Supply Agency
EUV	end-use verification
FDA	Rwanda Food and Drugs Authority
FMoH	Federal Ministry of Health
FASP	forecasting and supply planning
FY	fiscal year
GDSN	Global Data Synchronization Network™
GH BEO	Global Health Bureau Environmental Officer
GHSC	Global Health Supply Chain
GIS	geographic information system
GLN	Global Location Number
GTIN	Global Trade Item Number
HF	health facility
HSCSS	health supply chain systems strengthening
ICT4D	Information and Communication Technologies for Development
IDIQ	indefinite delivery, indefinite quantity
IEE	Initial Environmental Examination

IHSC	Integrated Health Supply Chain
KPI	key performance indicator
LLIN	long-lasting insecticide-treated net
LMIS	logistics management information system
M&E	monitoring and evaluation
MIS	management information system
MOH	Ministry of Health
MOP	Malaria Operational Plan
NAFDAC	National Agency for Food and Drug Administration and Control
NFO	non-field office
NMCP	National Malaria Control Program
NSCA	National Supply Chain Assessment
OOS	out of specification
OSPSANTE	tracking tool for health products (French acronym)
OTD	on-time delivery
OTIF	on-time in-full
PCG	Pharmacy Central of Guinea
PMI	U.S. President's Malaria Initiative
PPMRm	Procurement Planning and Monitoring Report – malaria
PSM	Procurement and Supply Management
Q	quarter
QA	quality assurance
QC	quality control
QMS	quality management system
RDC	regional distribution center
RDD	requested delivery date
RDT	rapid diagnostic test
RFHP	Regional Funds for Health Promotion
RHB	regional health bureau
SCM	supply chain management
SDP	service delivery point
SMC	seasonal malaria chemoprevention
SOH	stock on hand
SOP	standard operating procedure
SP	sulfadoxine-pyrimethamine
SP/AQ	sulfadoxine-pyrimethamine + amodiaquine
TA	technical assistance
TO2	malaria task order
TWG	technical working group
TransIT	Transportation Information Tool
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
WMS	warehouse management system
WHO	World Health Organization

Executive Summary

The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project is pleased to present this annual report. It summarizes the project's work and performance for the malaria task order, Task Order 2 (TO2), for Quarter (Q)1, Q2, Q3 and Q4 of Fiscal Year (FY) 2019. This work contributes to the goals of the U.S. President's Malaria Initiative (PMI) to reduce malaria deaths and substantially decrease malaria morbidity, toward the long-term goal of elimination.

GHSC-PSM procured malaria commodities for 30 countries and provided supply chain systems strengthening for malaria commodities in 22 countries in sub-Saharan Africa and the Greater Mekong sub-region of Southeast Asia. This report summarizes efforts to provide lifesaving commodities and to build efficient, reliable and cost-effective health supply chains to deliver malaria products for PMI over this reporting period.

School children in Ghana receiving malaria long-lasting insecticide-treated nets (LLINs). *Photo credit: GHSC-PSM.*

Objective 1: Improved Availability of Health Commodities (Global Procurement and Logistics)

Procurement

In FY 2019, GHSC-PSM procured malaria commodities valued at more than $134 million for 30 countries. The value of GHSC-PSM procurements of specific malaria product categories is shown in Exhibit 1.

Exhibit 1. Value of procurements of malaria product categories in FY 2019

Product Category	Value
LLINs	$69,909,465
Artemisinin-based combination therapies	$24,901,930
Rapid diagnostic tests	$16,827,150
Severe malaria medicines	$10,839,259
Sulfadoxine-pyrimethamine (SP)	$5,221,770
Other pharmaceuticals	$380,160
Other nonpharmaceutical products	$553,863
Laboratory	$634,270
TOTAL	**$134,422,067**

Market Health

GHSC-PSM continues to contribute to PMI's efforts to improve global malaria commodity market health. Over the course of the project, GHSC-PSM conducted market health assessments for all products to identify opportunities for market-shaping interventions. Based on these assessments, in FY 2019 the project focused on supporting market dynamics recommendations in the strategic sourcing process. For rapid diagnostic tests (RDTs) and artemisinin-based combination therapies (ACTs), the project focused on supplier engagement and vendor negotiations for long-term agreements. The project developed strategies for request for proposals, including an LLIN tender. GHSC-PSM also established order allocation strategies that will incentivize affordability and market sustainability.

Strategic Sourcing

GHSC-PSM achieved important strategic sourcing gains:

RDTs

For the first time, TO2 placed multiple bulk order allocations, wherein each supplier is given advance notice of forthcoming orders that it will be requested to fulfill. In contrast to the prior approach, which used spot tendering on an order-by-order basis, the bulk order allocation process increases transparency for suppliers and reduces procurement lead time, thereby allowing for a more efficient supply chain. The new approach was undertaken as part of implementing a new sourcing strategy that is

focused on awarding suppliers with market share commensurate with the value provided to GHSC-PSM and improving the health of the RDT market.

Supplier Forecasts and Order Allocations

In a first for TO2, for selected commodity categories under allocation methodologies, GHSC-PSM provided supplier-specific forecasts and started allocating orders in tranches. This increases transparency for suppliers, enables forward-planning, and allows for a more efficient supply chain.

Long-Lasting Insecticide-Treated Nets

GHSC-PSM issued a request for proposals for the supply of LLINs, including an option to provide vendor-managed inventory services. The new solicitation responds to fundamental changes in the market for suppliers, product appropriateness and demand for next-generation products.

Fixed-Price Long-Term Agreements

GHSC-PSM executed fixed-price long-term agreements with suppliers of a variety of artemisinin-based finished pharmaceutical products, including artemether-lumefantrine (ALu), artesunate-amodiaquine, (ASAQ) and rectal artesunate. The strategy underpinning these contracts was developed and executed in collaboration with the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) and is designed to help stabilize the upstream artemisinin-market for these critical commodities. The project developed an allocation methodology and in FY 2019 began issuing bulk order allocations under this approved methodology, designed to standardize and streamline procurement processes and decision making.

Sulfadoxine-Pyrimethamine

GHSC-PSM issued a request for proposals for fixed pricing and bulk supply of SP, including an option to provide vendor-stored inventory services. The new solicitation responds to exceptionally long lead times and fluctuations in pricing stemming from API insecurity, fractured market demand, and a proliferation of stock-keeping units.

Use of the Malaria Stockpile to Prevent Stock-outs

GHSC-PSM used the PMI ACT stockpile, located in the project's regional distribution center (RDC) in Belgium, to

fulfill emergency needs and avert stock-outs for ALu in six countries. Also, from the same Belgium warehouse, GHSC-PSM distributed SP to two countries and artesunate injectables to three countries, shortening wait times for delivery by several months in each instance.

Procurement Through Framework Contracts

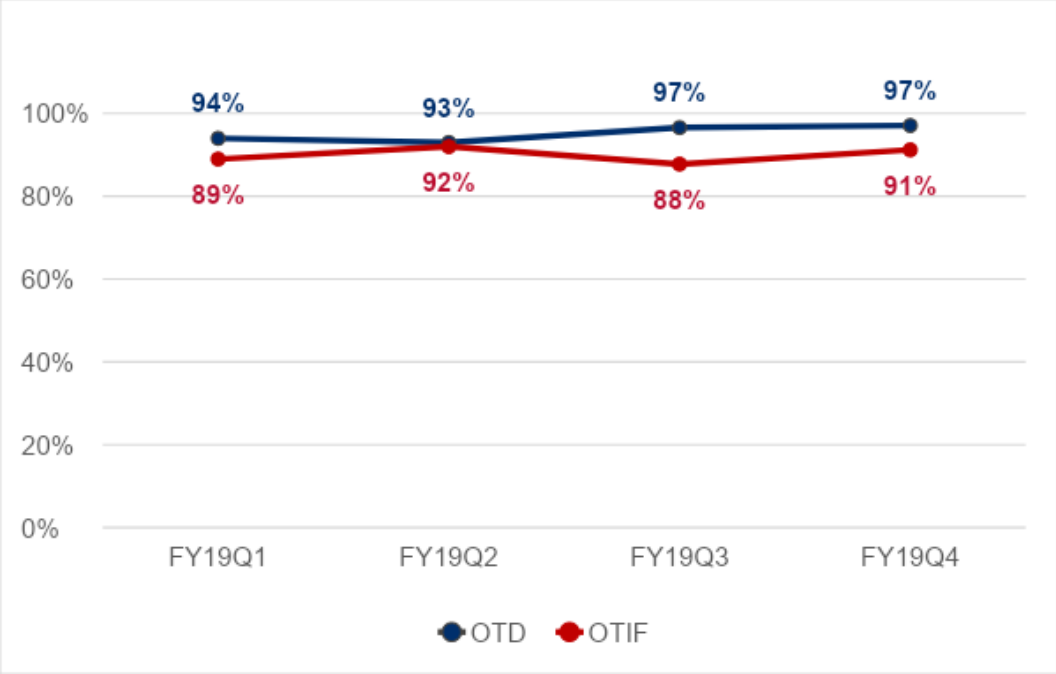
In FY 2019, 99 percent of ACTs, and 100 percent of all other pharmaceutical products, were procured through framework contracts. Also, since Q2 100 percent of RDTs were procured through framework contracts. GHSC-PSM executed framework agreements for artemisinin-based finished pharmaceutical products and plans to sign a similar agreement for LLINs in FY 2020. Framework agreements reduce transaction costs and improve predictability in the market by establishing relationships with vendors based on long-term contractual agreements.

Delivery

GHSC-PSM's on-time delivery (OTD) window is –14/+7 days, which is 65 percent shorter than the –30/+30 day OTD window used on predecessor projects. In Q3 FY 2019, GHSC-PSM achieved a 97 percent

OTD and an 88 percent on-time in-full (OTIF) delivery rate. In Q4, the OTD rate was 97 percent and OTIF was 91 percent, as shown in Exhibit 2. Annual OTD for FY 2019 was 95 percent.

Exhibit 2. Task Order 2: OTIF versus OTD



Logistics

Now an annual process, GHSC-PSM rebid contracts for third-party logistics (3PL) service providers that offer superior service and increase value through better data visibility and shorter delivery times at the best price. The project re-competed contracts for all TOs for 1,945 lanes by air and 3,086 lanes by ocean, designating primary and secondary providers for each destination country. This allows GHSC-PSM to change providers quickly for reasons relating to performance, transit times, and/or freight rates for a specific lane.

Mode of Transit Pilot

GHSC-PSM executed a mode of transit pilot for RDTs and select pharmaceutical commodities to explore ocean mode of transit as a potential cost savings measure for commodities other than LLINs and lab commodities. The results of this pilot helped to support a PMI policy change, issued in Q3 to expand the scope of ocean shipments to include all product categories, subject to cost savings, quality assurance (QA), and feasibility consideration. GHSC-PSM is implementing this new policy in earnest in early FY 2020 with the MOP19 call for orders, with the expectation of significant cost savings.

Product Loss

GHSC-PSM experienced low product loss of malaria products under its control. In Q3 and Q4, $84,726 of malaria products were lost due to expiry, while $20,512 of products were lost due to theft, damage or other causes while under project control, as shown in Annex G. The overall value of product lost (expiries, theft, damage, other) for FY 2019 was $280,941.

Shelf life remaining for malaria products stored in project RDCs was 69 percent for Q3. This was a 3 percent increase from Q2 FY 2019. In Q4, shelf life increased to 79 percent, 9 percent above the project target of 70 percent for this fiscal year. Note that this shelf life figure now only includes ACTs that are part of the emergency stockpile. Up until Q2 FY 2019, the shelf life calculation included orders transiting through the RDC as part of a country-specific fulfillment strategy.

Quality Assurance/Quality Control

In FY 2019, the project designed and implemented a customized Quality Assurance Management System (QAMS), in collaboration with PMI, and trained QA, Procurement and Deliver/Return teams in its. QAMS automates the process for capturing QA-related information for malaria commodity orders and improves tracking and reporting of orders' QA status in the Automated Requisition Tracking Management Information System (ARTMIS). The system provides a comprehensive view of QC activities for orders procured for any malaria task order commodity and complements other tools to ensure OTD.

By using a risk-based testing approach informed by careful analysis and evaluation of testing data, GHSC-PSM generated $345,722 in cost savings in testing ACTs. The project is exploring applying a risk-based approach to the RDT QC strategy and has submitted a proposal to PMI.

No product recalls were reported during the FY 2019.

LLIN Manufacturer Issue

Early in Q2, GHSC-PSM learned of a systemic issue at the manufacturing-site level, affecting multiple donors and resulting in several out-of-specification results for deltamethrin content in LLINs produced by a contracted manufacturer. The investigation revealed a deviation from the validated manufacturing process, resulting in, among other things, the likely need to replace LLINs manufactured under these suspect conditions sooner than planned in affected countries.

The project reacted swiftly and collaborated with stakeholders to respond. GHSC-PSM continues to work closely with PMI to execute testing protocols for nets and is in communication with the manufacturer to determine next steps. For a more detailed account of the project's response to this issue, see section C.1.

Objective 2: Strengthened In-Country Supply Chain Systems

GHSC-PSM builds local supply chain capacity based on global best practices, addressing critical components of a sustainable supply chain. The project works to strengthen national supply chains and improve malaria commodity availability in 22 TO2-supported countries. Technical support varies widely by country, with support as follows:

- Forecasting and supply planning (FASP) (in 20+ TO2-supported countries)
- Logistics management information systems (LMISs) (in 19 TO2-supported countries)
- Warehousing and distribution (in 17 TO2-supported countries)
- Strategy and planning (in 17 TO2-supported countries)
- Workforce development (in 12 TO2-supported countries)

- Governance and leadership (in 11 TO2-supported countries)
- Process improvement (in five TO2-supported countries)

GHSC-PSM continues to see growth in supply plan submission from PMI-supported countries, reflecting the expansion of the recommended technical approach through technical assistance interventions and frequent communication. An all-time high of 23 countries submitted malaria supply plans in Q3 FY 2019, and 22 countries submitted plans in Q4 FY 2019. PMI requires that all PMI countries submit supply plans and GHSC-PSM is collaborating with PMI countries to support a 100 percent submission rate.

Work related to LMIS systems ranged from supporting the development of integrated and/or interoperable systems in Ghana, Guinea and Mali to identifying a local OpenLMIS vendor to provide ongoing technical support to health facility end users in Malawi. GHSC-PSM is also working in countries such as Burundi and Ethiopia to systematize data quality system assessments to inform feedback loops with health facilities.

Warehousing and distribution support ranged from improving regional warehouse storage conditions in Cameroon and Ethiopia to installing solar-powered prefabricated warehouses in Malawi.

Workforce development activities ranged from delivering the fifth in a series of global webinars on supply chain professional workforce development for development partners and country governments focused on career paths and professionalization to training teachers to conduct supply chain management courses in Burundi, to sharing results of the Theory of Change pilot conducted in Rwanda with the Ministry of Health and development partners. In total, 1,736 people were trained exclusively with malaria task order funding on malaria specific supply chain issues.

In the second half of FY 2019, GHSC-PSM harmonized end-use verification (EUV) methodology and tools with actual use cases and created a standard package covering training, sampling, data collection, validation, analysis and reporting. In FY 2019, 13 GHSC-PSM EUV implementing countries moved to the updated version of the survey, as have three GHSC-TA-Francophone Task Order countries and one IHSC-TA country.

Objective 3: Effective Global Collaboration to Improve Long-Term Availability of Health Commodities

GHSC-PSM supports USAID's and PMI's leadership and participation in important global supply chain fora. The project also provides leading-edge research to help shape global markets for health commodities, share supply chain information with other donors and collaborators as a global good, ensure that the GHSC-PSM supply chain stays current with emerging requirements, and effectively manage and share knowledge of best practices and lessons learned. The project:

- Is providing leadership in promoting use of GS1 standards in global and country supply chains. This includes launching the TraceNet Working Group to develop identification, labeling and data exchange procurement requirements for LLINs. The project also supported development of the Call to Action presented by National Agency for Food and Drug Administration and Control at the 2nd African GS1 Healthcare Conference. This initiative states the case for adopting global standards for medicine traceability.

- In accordance with market-based strategies developed with PMI, the Bill and Melinda Gates Foundation, IVCC and MedAccess, formalized a mechanism through which Innovative Vector Control Consortium (IVCC) will subsidize a portion of the cost of the nets paid for by PMI to facilitate the purchase of dual AI nets by GHSC-PSM.
- Conducted market dynamics research and provided support related to establishing strategic long-term agreements with suppliers to enhance ongoing procurement of antimalarials.
- Coordinated with other GHSC contracts, specifically the GHSC-QA, GHSC-Technical Assistance, and GHSC-Business Intelligence and Analytics (BI&A) contracts.
- Maximized synergies among the four health areas supported by the GHSC-PSM contract.
- Participated in the Global Fund LLIN Supplier and Partner Meeting in Singapore where PMI, UNICEF, World Health Organization, Vector Control and LLIN manufacturers/suppliers discussed manufacturer quality requirements and allocation strategies for LLINs.

Overall, across three objectives in FY 2019, GHSC-PSM built on the previous efforts in its global supply chain and country program operations, innovating and implementing successful approaches. The project worked closely with PMI to establish priorities for work and contributed to malaria control efforts.

Emergency Response

On March 14, Cyclone Idai struck three PMI-supported countries: Malawi, Mozambique and Zimbabwe—with the most extensive impact in Mozambique. The project delivered nearly half a million LLINs to these three affected countries to address the threat of malaria resulting from displaced persons not sleeping under LLINs. Also, in Mozambique, GHSC-PSM was the first to arrive to assess damage to warehouses and commodities. Project staff worked with the central medical store (called CMAM) to develop new procedures to manage the flow of emergency supplies, process deliveries and manage their storage in temporary tents, and manage the pickup of supplies by emergency responders. In Zimbabwe, GHSC-PSM supported emergency response efforts by helping get supplies to districts that were the most affected by the storm and in Malawi the project distributed LLINs to flood-affected areas.

Organization of the Report

This report describes GHSC-PSM's activities and achievements under each of three objectives. In the appropriate sections, results are provided for applicable indicators from the project's monitoring and evaluation (M&E) plan. The project's Results Framework (Annex A), summary M&E plan (Annex B), and detailed reports of project performance on TO2 M&E indicators that are not elaborated in the text are provided in a separate document (Annexes C–N).

A. Improved Availability of Health Commodities

GHSC-PSM works to improve availability of health commodities through the procurement and delivery of commodities to supported countries. This is accomplished through enhanced commodity procurement, strengthened global logistics processes, adherence to QA requirements, and improved data visibility. Activities and achievements in these areas are discussed and relevant performance indicators are summarized below.

A.1 Enhancing Global Health Commodity Procurement

Under the PMI-funded malaria task order (TO2), GHSC-PSM supplies lifesaving prevention and treatment medicines, rapid diagnostic tests (RDTs), LLINs, and lab supplies. New processes allow the project to stagger deliveries, leverage data sources to increase visibility, and operationalize new allocation methodologies. New tools (see section A.4) are bringing multiple datasets together to streamline and standardize order processes, automate decision making and increase collaboration with counterparts.

This section describes the project's commodity procurement-related activities in relation to market dynamics, strategic sourcing, routine procurement and delivery of malaria commodities, management of the artemether-lumefantrine (ALu) stockpile, management of supplier relationships and vendor negotiations, and support for countries managing their own procurements (referred to as decentralized procurement).

GHSC-PSM Market Dynamics Analysis

On behalf of the U.S. President's Malaria Initiative (PMI), GHSC-PSM contributes to shaping global malaria commodity markets to enhance supply security, accelerate innovation, and drive value for money. This supports near- and long-term PMI access to appropriate, quality-assured products at sustainable price points.

GHSC-PSM is contributing to PMI's efforts toward improving the global malaria commodity market health through a three-step approach:

1. **Market health assessments** for all products to identify market-shaping opportunities
2. **Deep-dive analyses on priority products** to design market-shaping interventions
3. **Strategic sourcing and procurement activities** to implement interventions and realize benefits

In FY 2019, GHSC-PSM focused on adopting market dynamics recommendations in its sourcing and procurement activities as described below.

Sourcing and Procurement Strategies

GHSC-PSM continued to advance strategies to achieve best value, increase supply chain efficiencies to support on-time delivery, and support market health within product portfolios.

- **Long-term agreements (LTAs).** The share of procurement managed under LTAs with key suppliers increased in FY 2019 across all major product categories. As of early FY 2020, more than 90 percent of task order spending will be performed under LTAs. Unlike individual contracts and spot tendering, LTAs streamline procurement processes by leveraging agreed-upon terms and conditions and allow for allocation strategies that help reduce the procurement burden on the project and suppliers and support standardization in procurement decision making. GHSC-PSM negotiated and signed its first fixed-price LTAs for artemisinin-based finished pharmaceutical products in FY 2019. Under existing LTAs for essential medicines, GHSC-PSM will execute fixed pricing and bulk procurements for sulfadoxine-pyrimethamine in early FY 2020. In this market with a history of substantial price volatility and long lead times, these efforts will help reduce tendering burdens on GHSC-PSM and its suppliers. Likewise, GHSC-PSM will execute fixed-price long-term agreements with LLIN suppliers in early FY 2020, based on solicitations issued in FY 2019. These framework agreements will enable an order allocation methodology to procure first and next generation long-lasting insecticide treated nets in accordance with country need.

- **Vendor-stored inventory services.** The project issued requests for proposals for creative solutions to significantly reduce lead times and create flexibility to respond to time-sensitive country needs. These proposals included vendor stored and managed inventory arrangements, which are currently under assessment for potential future implementation across several product categories, including ALu.

- **Re-solicitation**. The project periodically re-solicits pricing, product, and registration information, keeping vendors abreast of project objectives for the product category and allowing suppliers to generate offers that reflect market conditions and support market health.

- **Supplier forecasts and order allocations.** In a first for TO2, for select commodity categories under allocation methodologies, GHSC-PSM provided supplier-specific forecasts and started allocating orders in tranches. This increases transparency for suppliers, enables forward-planning, and allows for a more efficient supply chain.

- **Optimal order assignment.** For select commodity categories, the project is allocating orders to suppliers using a systematic approach in accordance with broader sourcing strategies and with the help of automated decision support tools.

- **Order integrity.** A new, auto-populated order tracker leverages data from malaria operational plans (MOPs), stock-on-hand[1] and Pipeline to identify red flags or discrepancies.

- **QA/QC testing.** The project fully implemented a Quality Assurance Management System (QAMS) that captures data for malaria commodity orders that require quality control (QC) activities. (More on QA is provided in section A.3 below).

[1] The stock-on-hand data comes directly from Pipeline and is reconciled with the most recent PPMRm report. Specifically, data are verified when an order is staggered to ensure that it aligns with consumption data and we are not causing a stockout.

Supplier engagement and vendor negotiations

The project continues to engage with suppliers for all malaria task order commodities to support market health and deepen our strategic relationships. Key activities in FY 2019 included:

- **Supplier-specific forecasts.** The project started generating and sharing supplier-specific forecasts for select commodity categories to improve planning capabilities and manage stakeholder expectations based on the project's demand allocation approach.
- **Supplier segmentation**. In FY 2019, GHSC-PSM implemented new approaches to manage supplier relationships and performance through segmentation based on critical factors such as spend, volume and market risk. Tactical processes were operationalized to track and incentivize operational performance, troubleshoot challenges, and negotiate and achieve best value for recipient countries.
- **Performance scorecards**. The project's quarterly meetings with malaria task order suppliers now include performance reviews using scorecards that emphasize on-time performance and rate incidents encountered based on severity and frequency, with the intention of encouraging suppliers to implement corrective and preventative actions, to comply with GS1 standards and to reinforce the importance of qualitative factors such as ease of doing business, responsiveness and reporting. Performance metrics promote supplier performance improvements while informing order allocation decision making. These efforts are positively impacting the project's overall supply chain performance.
- **Supplier on-time delivery management.** As of September 2019, supplier on-time performance was tracking at 64 percent across all commodities, down from 75 percent in August 2019, driven by a large lab order for Democratic Republic of the Congo that faced significant delays. This was addressed through the implementation of corrective and preventative actions with the supplier. Excluding the large lab order, which was delayed in September, overall supplier performance was 79 percent for FY 2019.

Delivery

- **Staggering deliveries.** At the very end of FY 2019, the project started proposing staggered delivery schedules for select products and countries based on potential freight savings and projected stock-on-hand. The objectives are to provide a consistent, reliable supply of product to countries, ensure the highest remaining shelf-life, enable more equitable use of emergency loan funds, ease logistics constraints and strain on storage in-country, and to hedge against potential changes in demand that are difficult to respond to if orders are placed in bulk for each country rather than in staggered tranches. This approach will be implemented in earnest with the MOP19 orders processed in early FY 2020.

- **Using regional distribution centers.** RDCs are used to pre-position and stockpile malaria commodities and ensure flexibility and responsiveness for last-minute quantity changes and delivery requirements. The project maintains an emergency stockpile of ALu, as well as an annual stockpile of sulfadoxine-pyrimethamine + amodiaquine (SP/AQ) purchased as part of a

pre-positioning strategy to ensure ready access to the product in time for seasonal malaria chemoprevention (SMC) campaigns.

- **Leveraging ocean freight.** As per guidance from PMI, and building upon pilots in select commodity categories, the malaria task order began evaluating all commodity categories for potential cost-savings opportunities and exploring the feasibility of ocean as a mode of transit with concurrent QC testing. This is a significant cost savings measure. Starting in FY 2020, the project will assess every new order for ocean delivery based on urgency, quality considerations, transit times and logistics feasibility, cost relative to air or truck as mode of transit, and remaining product shelf-life.

These and other efforts supported specific sourcing activities for artemisinin-based finished pharmaceutical products, SP/AQ, RDTs, SP and LLINs, as described below.

Strategic Sourcing Activities

Pharmaceuticals

Building on the success of the sourcing strategy adopted in the prior fiscal year, GHSC-PSM met the needs of all eight SMC campaigns while achieving commodity cost savings compared to the approach taken before implementing the new strategy. The new strategy addresses growing demand and the limitations of constrained capacity by contracting directly with the manufacturer and using incremental, staged deliveries of SP/AQ from an RDC to countries in accordance with planned SMC campaigns. The project also entered into an LTA with an additional SP/AQ supplier to further reduce supply risk and secure production capacity with both vendors for FY 2020 to ensure availability of goods.

Other activities included:

- Awarding new multi-holder indefinite delivery, indefinite quantity (IDIQ) subcontracts with fixed pricing for artemisinin-based finished pharmaceutical products. This activity is part of a strategy developed with USAID and the Global Fund to stabilize the upstream market for raw/intermediate starting material, promote sustainable pricing, and support long-term access to a suite of critical antimalarial pharmaceutical products.

- Beginning to place orders under these LTAs and rolling out the project's order allocation strategy. This strategy aims to determine best value by rewarding suppliers that invest in criteria that matter to GHSC-PSM and recipient countries with allocations that are commensurate with the strength of their offers. Procurement will be carried out in accordance with this strategy over the course of FY 2020. These fixed-price contracts and the supporting allocation methodologies also serve to reduce sourcing and production cycle time.

- Posting an open expression of interest (EOI) for malaria pharmaceuticals. Through this EOI, suppliers can submit products for internal review with the potential to be included in new or

existing LTAs following the procurement of all malaria pharmaceuticals in the supplier's portfolio.

- Procuring 100 percent of all SP, a key preventative pharmaceutical for pregnant women, through fixed price contracts in the first half of FY 2019. Previously, the project used framework contracts that relied on spot tendering to establish pricing on an order-by-order basis. New fixed prices in a market with a history of substantial price volatility and API insecurity will help reduce tendering burdens for GHSC-PSM and its suppliers, reduce fulfillment lead-times, and stabilize pricing. The modifications are expected to be executed before the end of Q1 FY 2020; the project has begun informing vendors of their allocations.

LLINs

In FY 2019, GHSC-PSM continued to advance the project's sourcing, supplier relationship, and procurement goals. Highlights include:

- Posting an RFP for supply of LLINs with an option to provide vendor-stored inventory services. The new solicitation responded to fundamental changes in the market for suppliers, product appropriateness, and demand for next-generation products.
- Negotiating LTAs and fixed-price agreements with eligible suppliers, with awards expected in Q1 FY 2020, to ensure the quality and appropriateness of LLINs procured on behalf of recipient countries.

The project also worked to help align global partners on quality standards and other priorities, participating in a Global Fund summit in September with all major LLIN suppliers and other procurers, and finalizing an agreement with the IVCC to make dual-active ingredient nets more affordable for countries experiencing resistance to single pyrethroid-treated nets.

RDTs

In accordance with the FY 2018 RDT strategy, GHSC-PSM's approach to RDT order allocation is contributing to better market health and cost savings through country-agnostic, fixed-price LTAs with suppliers. Project activities included:

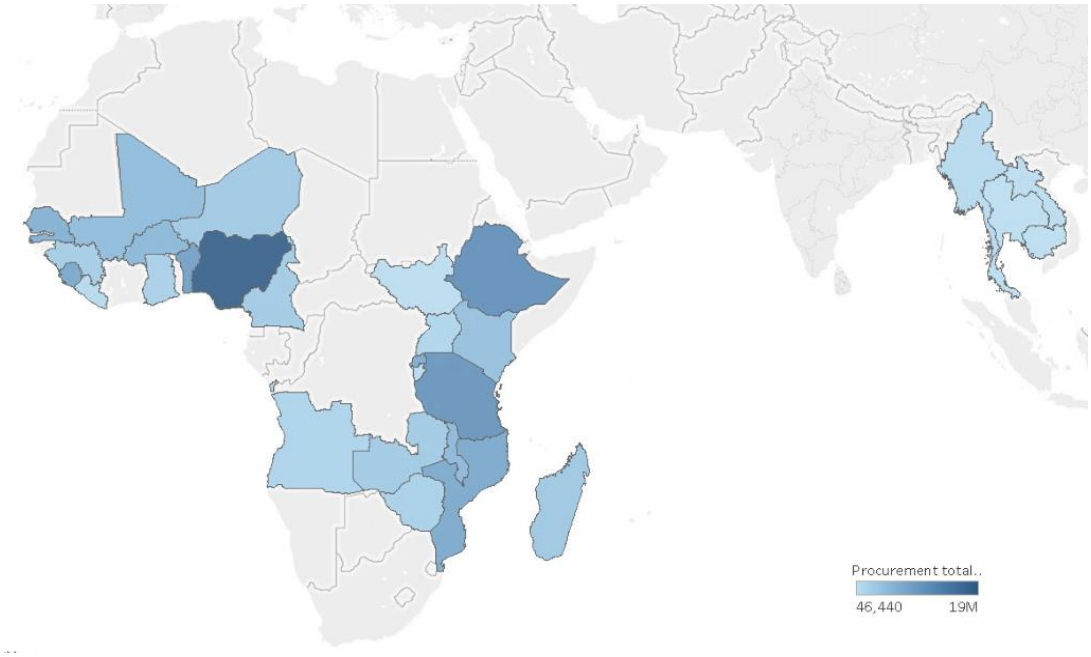
- Placing multiple bulk order allocations, a first for the malaria task order, in FY 2019.
- Issuing a request for quotation from suppliers under contract in the second half of FY 2019 to serve as a key input to the MOP19 allocation strategy. Re-solicitation keeps vendors abreast of project objectives for the product category and allows them to create offers that reflect market conditions.

GHSC-PSM's FY 2020 allocation strategy increases emphasis on transparency, including the malaria task order's first use of supplier-specific forecasts to improve planning capabilities and to manage stakeholder expectations.

Countries for Which GHSC-PSM Procured Malaria Commodities

In FY 2019, GHSC-PSM procured malaria commodities valued at more than $134 million for 30 countries, as shown in Exhibit 3. This includes PMI's first completed deliveries of malaria commodities for Sierra Leone and Niger.

Exhibit 3. Countries for which GHSC-PSM procured malaria products in FY 2019



Procurement and end-to-end management of orders from receipt through on-time delivery and payment require planning, open communication and careful coordination with a broad group of stakeholders both within and external to the supply chain and project at large. In FY 2019, GHSC-PSM devoted considerable attention to strengthening feedback loops and integration within the supply chain. The team collaborated closely with external stakeholders, from USAID Missions to suppliers, logistics providers, customs agents and others. Project staff in headquarters and in country offices provide this support. Also, headquarters staff continued to provide procurement support for five countries—Benin, Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Senegal and Tanzania—where the project has no field presence.

Delivery Timeliness

GHSC-PSM achieved an on-time delivery (OTD) rate of 94 percent in Q1, 93 percent in Q2, 97 percent in Q3 and Q4. On-time in-full (OTIF) rates of 89 percent, 92 percent, 88 percent and 91 percent for malaria commodities these four quarters, respectively. Project performance continues to be well over the target of 80 percent.

Response to Emergency Orders to Prevent Stock-Outs

In FY 2019, GHSC-PSM quickly responded to emergency orders for ALu, SP, and artesunate injectable. The project fulfilled urgent needs using produced and QC-tested commodities held in RDCs, which reduced delivery and cycle times and helped prevent stock-outs. (See also section B.5.)

Procurement Totals

GHSC-PSM procured malaria commodities worth just over $134 million in FY 2019, as shown in Exhibit 4. A detailed list of procurements is provided in Annex C. Annex D provides lists of GHSC-PSM sources of RDTs, LLINs, ACTs, laboratory supplies and other pharmaceutical products.

Exhibit 4. GHSC-PSM procurement totals for all of FY 2019

Product Category	Value
LLINs	$69,909,465
ACTs	$24,901,930
Rapid diagnostic tests (RDTs)	$16,827,150
Severe malaria medicines	$10,839,259
Sulfadoxine-pyrimethamine (SP)	$5,221,770
Other pharmaceuticals	$380,160
Other non-pharmaceutical products	$553,863
Laboratory	$634,270
TOTAL	**$134,422,067**

Managing the Malaria Stockpile

In the RDC in Belgium, GHSC-PSM maintains PMI's malaria stockpile of a relatively small cache of ACTs for rapid allocation to countries based on need. In FY 2019, the project used the ALu stockpile to fulfill emergency and urgent orders for six PMI countries that otherwise would have experienced stock-outs (see Exhibit 5).

Typical lead-time for ALu is 39 weeks from receipt of a requisition order to arrival in country, which includes production and QA lead times. The ALu stockpile maintains stringent regulatory authority–approved product that is registered in most PMI countries, so products can be disbursed almost immediately (pending import waiver lead times), shortening the door-to-door delivery time to eight weeks on average.

Exhibit 5 illustrates the shortened lead times of the stockpile compared to fresh production and the reduced lead times that could contribute to averting low-stock or stock-outs. On average, the stockpile allows for seven to nine months in reduction of cycle times for emergency orders, and two to five months in reduction of cycle times for urgent orders that are placed with insufficient lead time for fresh production, but requested delivery dates (RDDs) can be met using stock.

Exhibit 5. Use of malaria stockpile in FY 2019 and months of stock-out averted (ALu)

Country	Order type	Order receipt	Requested delivery	Actual delivery	Estimated delivery date *(if fresh production)*	Reduced lead time
Benin	Urgent	Aug. 2018	Jan. 2019	Feb. 2019	May 2019	3 months
Guinea	Emergency	Mar. 2018	ASAP	Mar. 2019	Dec. 2019	9 months
Malawi	Urgent	Aug. 2018	Jan. 2019	Jan. 2019	Feb. 2019	1 months
Zimbabwe	Emergency	July 2018	Sept. 2018	Oct. 2018	April 2019	6 months
Zimbabwe	Urgent	Aug. 2018	Sept. 2018	Dec. 2018	May 2019	5 months
Senegal*	Urgent	Sept. 2018	Feb. 2019	May 2019	Jul. 2019	2 months
Cameroon**	Urgent	Oct. 2018	Feb. 2019	May 2019	Aug. 2019	3 months

*Stockpile or fresh production order placement delayed due to funding
**Order was on hold until March 2019

In addition to the ALu stockpile GHSC-PSM maintains for emergencies, RDCs have become a staging solution for other commodities. After the transfer of several large orders of artesunate injectable and SP (from countries that no longer needed the products) in Q1 and Q2 FY 2019 to the RDC in Belgium, GHSC-PSM managed a de facto stockpile of these commodities and fulfilled the following urgent and emergency orders in four countries (Exhibit 6).

Exhibit 6. Q1–Q2 FY 2019 and lead time averted (other pharma)

Country	Commodity	Order	Requested delivery	Actual delivery	Estimated delivery date *(if fresh production)*	Reduced lead time
Madagascar	Artesunate injectable	Apr. 2018	Jan. 2019	Dec. 2018	Feb. 2019	2 months
Madagascar	Sulfadoxine-pyrimethamine	July 2018	Feb. 2019	Jan. 2019	June 2019	5 months
Mozambique	Artesunate injectable	July 2018	Jan. 2019	Mar. 2019	May 2019	2 months
Niger	Sulfadoxine-pyrimethamine	Feb. 2018	June 2018	Oct. 2018	Feb. 2019	4 months
Zimbabwe	Artesunate injectable	Apr. 2018	Feb. 2019	Dec. 2018	Feb. 2019	2 months

Procurement Indicators

GHSC-PSM has several indicators to measure its performance. Procurement results are summarized below, with details provided in Annex E. As shown in Annex E, GHSC-PSM has transitioned to procuring most malaria products through framework contracts.

In FY 2019, GHSC-PSM procured 99 percent of all ACTs and 100 percent of all other pharmaceutical products through framework contracts. Also, as of Q2, 100 percent of RDTs were procured through framework contracts. When aggregated across all product categories, the overall framework contracting percentage for FY 2019 was 46 percent, exceeding the target of 40 percent. The most significant outstanding product category for framework contract procurements is LLINs, which were still procured using non-framework agreements in FY 2019. This is expected to change in FY 2020, per the new LLIN sourcing strategy described in section A.1.

A.2 Strengthening Global Logistics Processes

GHSC-PSM delivered malaria commodities to 28 countries in Q3 and Q4 and 30 countries during the fiscal year. From late FY 2018 into early FY 2019, the project developed new approaches to strategic planning, logistics, data visibility and capacity building, yielding a significant OTD improvement in FY 2019.

GHSC-PSM executed a mode of transit pilot for RDTs and select pharmaceutical commodities. In this initiative, PMI approved a subset of consignments to travel by ocean based on a subset of requirements (potential cost savings, origin, destination, quantity, remaining shelf life, etc.). The intent was to explore this mode of transit as a potential cost savings measure for commodities other than LLINs and lab commodities, which have historically been the only categories approved for ocean shipment as per PMI policy.

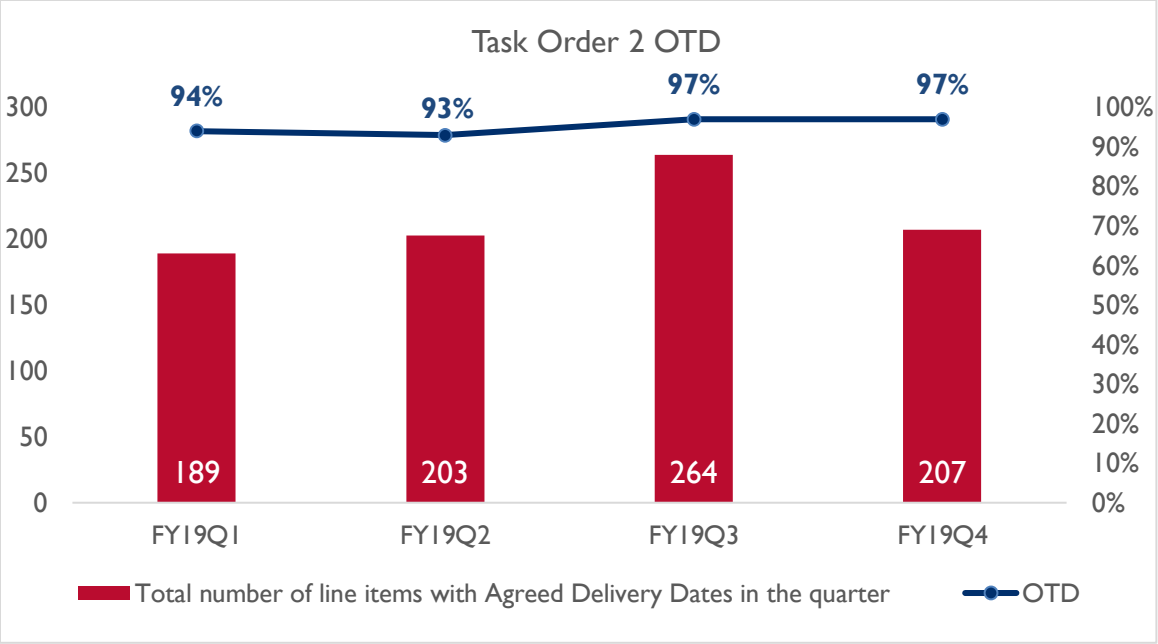
For shipments that traveled by ocean, a temperature-monitored reefer container and data loggers ensured product quality while in transit. GHSC-PSM shipped numerous orders by ocean, and ultimately maintained high quality standards, reduced cost, and promoted efficient logistics practices. Results of this pilot helped to support a PMI policy change, issued in Q3 FY 2019, that expanded the scope of ocean shipments to include all product categories, subject to cost savings, QA, and feasibility consideration. GHSC-PSM is implementing this new policy in earnest in early FY 2020 with the Malaria Operational Plan (MOP) FY2019 call for orders. Significant cost savings are expected.

On-Time Delivery

GHSC-PSM's on-time delivery window is –14/+7 days, which is 65 percent shorter than the –30/+30 day OTD window used for PMI products on predecessor projects. Exhibit 7 shows the project's OTD rate for malaria commodities over the past four quarters. The OTD rate measures the number of line items with agreed delivery dates in the quarter delivered on time out of the total number of line items with agreed delivery dates in the quarter. In Q3 FY 2019, GHSC-PSM achieved 97 percent OTD: a 4 percent increase from Q2 FY 2019. In Q4, the project achieved 97 percent OTD.

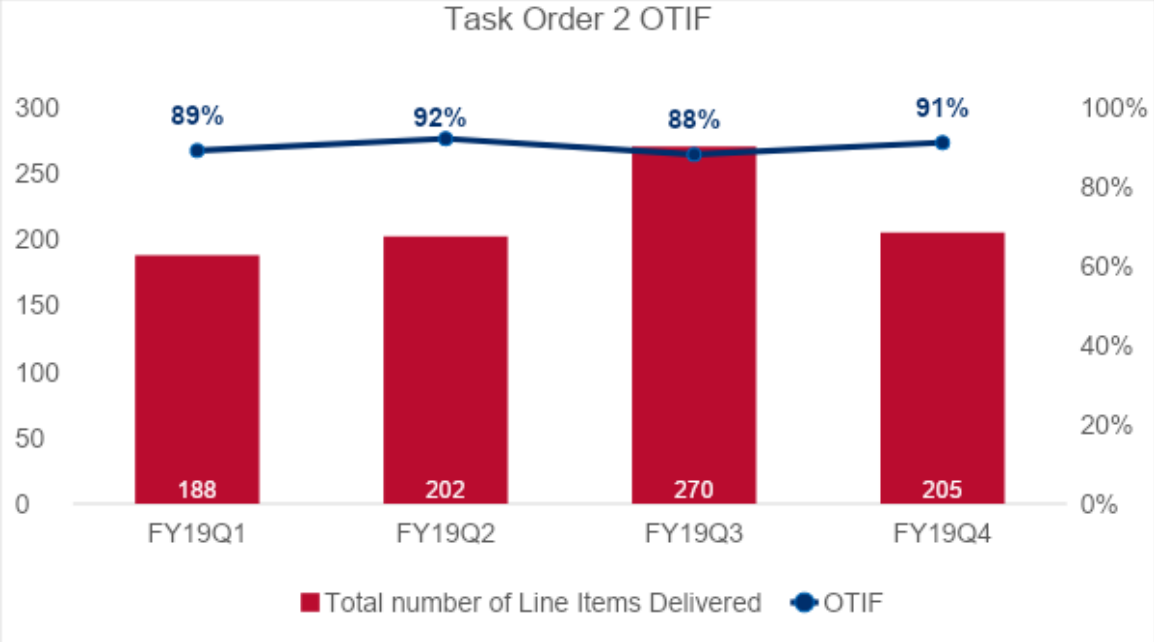
To supplement information on TO2-wide OTD presented above, OTD and OTIF for specific malaria product categories are presented in Annex F.

Exhibit 7. OTD and volume of deliveries of malaria commodities, Q1-Q4 FY2019



GHSC-PSM's OTIF rate measures the percentage of deliveries during a given period that were delivered on time and in full. Delivery of late orders in a month subsequent to the agreed delivery date drives down the OTIF rate, as can delivery of split shipments, which helps explain the difference between OTD and OTIF rates. In Q3, OTIF for malaria commodities was 88 percent and in Q4, 91 percent. Over the course of FY 2019, GHSC-PSM's OTIF rate for malaria commodities has remained steady despite a 22 percent increase in volume of deliveries from Q1 and Q2 to Q3 and Q4 (see Exhibit 8). The increase in deliveries can in part be attributed to a deliberate effort to split orders into volumes and weights based on logistical and in-country warehousing constraints which allow for deliveries to be made within one on-time delivery window. Moving forward, with the implementation of staggered deliveries for select commodity categories and countries, the trend is expected to continue.

Exhibit 8. OTIF for malaria commodities, Q1–Q4 FY 2019



Warehousing

GHSC-PSM continues to realize cost savings from consolidating RDCs from five to three in FY 2018 and negotiating discounted per-pallet warehousing rates. Since transitioning malaria task order commodities to the Belgium RDC and using the new RDC in South Africa for Mozambique orders in FY 2019, the project has saved more than $500,000 for the malaria task order alone, compared to warehousing and freight costs for those commodities under the previous model.

GHSC-PSM continues to stock ALu in the Belgium RDC to support emergency and/or unplanned orders. With this process, the project can pre-position commodities for faster deployment to implementing partners and can have greater flexibility in country order quantities. On an ad hoc basis, the project can accommodate supplier warehouse constraints related to QA or duty waiver lead times. In FY 2019, GHSC-PSM also pre-positioned products in the Belgium RDC to ensure availability and on-time delivery for time-sensitive seasonal malaria chemoprevention campaigns.

Logistics Contracts

In FY 2019, warehousing savings for TO2 were $576,260 and freight savings from RDC optimization were $131,855. GHSC-PSM calculates these savings by comparing the costs of shipping and storing malaria commodities under the pre-optimization and post-optimization scenarios using established warehousing and freight rates. To calculate freight savings, GHSC-PSM looks at all inbound and outbound orders from the RDCs since the optimization and compares them with the cost of sending them through the former warehouse network. Transportation savings were realized because the new distribution centers are located optimally along low-cost freight lanes between suppliers and destination countries.

3PL Recompetition to Seek Further Value

A year after selecting 3PL service providers that could maximize value by providing better prices and shorter delivery times, GHSC-PSM recompeted its contracts seeking further savings and efficiencies.

Existing logistics service providers submitted updated rates, transit times and details on their door-to-door transportation services (air, sea and land), including duty waiver processing, export/import clearance services, in-transit storage and accessorial services. Bidders provided refreshed rates for all TOs for:

- 1,945 lanes by air; each lane has six different weight categories across four temperature gradients
- 3,086 lanes by ocean; each lane has four different container types across U.S. flag/foreign flag requirements

Similar to FY 2018, GHSC-PSM analyzed more than 500,000 data points to compare 3PLs across the multitude of simulated demand scenarios for each combination of country, lane, temperature, weight and mode. Selection criteria included price, transit time and performance during the last year. The project also considered USAID Mission and GHSC-PSM field office assessments of existing providers' performance. In the contract awards, GHSC-PSM designated primary and secondary providers for each destination country, which allows the project to change providers quickly for reasons relating to performance, shorter transit times and/or freight rates for a specific lane.

Logistics and Delivery Indicators

This section presents performance on logistics- and delivery-related indicators that were not presented above. Values for these indicators are shown in Annexes F–H.

Product Loss

GHSC-PSM experiences low product loss of malaria product under its control. In Q3 and Q4, $84,726 of malaria products under project control were lost due to expiry. Most of the loss was attributable to the expiry of SP/AQ commodities in the RDC. The product was originally destined for a direct drop that was rerouted to the RDC for an extended quality test. By the time the testing was completed, the remaining shelf life was short. Though the project was able to use some of the commodities, the remainder were destroyed.

The value of product loss due to theft, damage or other causes (other than expiry) while under project control totaled $20,512 in Q3 and Q4 FY 2019, as shown in Annex G. Of the nine claims made related to these losses, five were reimbursed by the 3PL or determined not to require reimbursement. The remaining four claims are in process for reimbursement or replacement of the lost commodities.

Cycle Time

Cycle time measures the end-to-end time from the USAID Mission requesting an order to the product's arrival in the destination country. For Q4 FY 2019, the average cycle time was 322 days, which was 2.2 percent above the project's FY 2019 target of 315 days for malaria products. Several factors can largely explain these cycle times:

- **Anticipated high demand.** In line with PMI policy and proactive preparation for seasonal demand, a large volume of orders are placed simultaneously. This necessarily leads to extended cycle times, as orders are often placed with delivery dates in the distant future that do not necessitate the entirety of the time between order placement and requested delivery to process and fulfill the order.

- **Challenging destinations.** Many more lines were delivered during Q1 and Q2 to inland destinations within the DRC with longer-than-average cycle times, which skews up the average.
- **Cycle time as a lagging indicator.** As a lagging indicator, cycle time does not capture improvements in order processing until the orders subject to those improvements are finally delivered.
- **Factors outside the supply chain.** Unavailability of funding (common for TO2 commodities), country-specific import challenges (e.g., Kenya), supplier-specific quality issues, client-requested holds, and in-country quantification continue to contribute to cycle times. In FY 2019, the project piloted new hold status fields in ARTMIS to account for scenarios where no processing or fulfillment activity is expected on an order. This type of tracking will allow GHSC-PSM to calculate "active" cycle times that reflect actual processing time more precisely for any given order. Following the pilot, the project adjusted and clarified the hold status policy, to take effect in early FY 2020.

Shelf Life Remaining for Warehoused Commodities

Shelf life remaining for malaria products stored in project regional distribution centers (RDCs) was 69 percent for Q3. This was a 3 percent increase from Q2 FY 2019. In Q4, shelf life increased to 79 percent, 9 percent above the project target of 70 percent for this fiscal year. Note that this shelf life figure now only includes ACTs that are part of the emergency stockpile, given PMI's strategy to have ACTs (unlike other commodities) continuously available in the stockpile. Up until Q2 FY 2019, the shelf life calculation included orders transiting through the RDC as part of a country-specific fulfillment strategy, which are done on an ad hoc basis.

GHSC-PSM tracks inventory and remaining shelf life closely and carefully balances risk of expiry with maintaining enough stock to respond to urgent and unforeseeable needs. As shelf life dwindles, the project sends inventory reports to the client and recipient countries to generate awareness of stock on hand available to be offered. In-country stock reports are consulted to identify potential recipients.

Late-Order Line Items

The percentage of line items that are late orders decreased to just one percent in Q4 FY 2018 after hovering between 6 and 7 percent for much of the year. This trend continued into the second half of FY 2019 as the rate further decreased to just 3.4 percent in Q3 and 2.9 percent in Q4 FY 2019.

A.3 Ensured Adherence to Quality Assurance Requirements

GHSC-PSM is directly responsible for ensuring the quality of the malaria commodities delivered through a comprehensive quality assurance/quality control (QA/QC) program.

Quality Assurance/Quality Control

In FY 2019, GHSC-PSM implemented a customized Quality Assurance Management System (QAMS) and trained members of the project's QA, Procurement and Deliver/Return teams in its use. QAMS automates the process of capturing and tracking QA-related information for malaria commodity orders that require QA through a new database that can project QC completion and track order performance against key performance indicators (KPIs) for any malaria task order commodity. The system improves

tracking and reporting of QA order status through ARTMIS, described in section A.4 below, and provides a full view of QC activities for orders procured for any malaria task order commodity.

GHSC-PSM delivered significant cost savings on testing artemisinin-based combination therapy (ACT) through carefully analyzing and evaluating testing data that informed a risk-based testing strategy. GHSC-PSM performed a similar assessment of RDTs; a proposal is currently under review by PMI.

The project reported cumulative savings of $345,723 in FY 2019 on testing costs for those products where the risk-based strategy was applied.

Pre-shipment Testing of LLINs Speeds Result Availability

In FY 2019, GHSC-PSM managed pre-shipment inspection and testing for 63 orders representing more than 36 million nets from five net vendors. The project reviewed the inspection reports and released all orders for shipment concurrently with laboratory testing.

Completed test results were available within five to 20 working days (an average of 13 days) after receipt of samples in the laboratory.

No product recalls were reported in FY 2019.

Quality Control

Pharmaceuticals Regulated by a Stringent Regulatory Authority

Malaria pharmaceuticals regulated by a stringent regulatory authority do not require laboratory testing according to PMI-approved instructions. In lieu of testing, GHSC-PSM reviews the manufacturer's certificate of analysis before shipment. In FY 2019, the project reviewed certificates of analysis for 16 batches of Coartem representing four Coartem products. The project found that all had satisfactory results and issued certificates of conformity for all batches.

Other Pharmaceuticals

Qualified independent laboratories inspected, sampled and tested other pharmaceuticals—including generic ALu, artemether injections, artesunate for injection, artesunate suppositories, generic ASAQ, SP tablets, SP/AQ tablets and various essential medicines—before shipment. Activities included:

- Performing 10 method transfers from suppliers to third-party testing laboratories. Transfers included artesunate suppositories 100mg, ASAQ 100/270mg, SP/AQ 262.5/76.5mg, ALu 20/120mg, artesunate injectable 60mg and artemether 80mg injectables.
- Reviewing test reports from testing laboratories for more than 900 batches before releasing the orders for distribution. Some were QC tested concurrently with shipment to ensure adherence to delivery timing requirements.

During FY 2019, the project identified ASAQ product discrepancies from a manufacturer, which affected two orders totaling eight batches. GHSC-PSM maintained communication with the manufacturer and provided guidance for its investigation, after which the batches were rejected as a precaution as the length of the investigation hindered program needs. The project continued to advise the manufacturer and is staying abreast of findings, including root-cause analysis of discrepancies and next steps.

LLINs

Early in Q2, GHSC-PSM learned of out-of-specification (OOS) results for deltamethrin content in LLINs produced by one manufacturer. The investigation revealed a deviation from the validated manufacturing process, resulting in nets potentially needing to be replaced sooner than planned. The

project reacted swiftly and collaborated with stakeholders to respond, completing a thorough LLIN market assessment and developing a customized mathematical optimization model to inform future LLIN market risk assessments, support operational decision making and inform development of the new LLIN sourcing strategy. The project also initiated remedy negotiations with the manufacturer to maximize compensation for PMI, minimize disruption to PMI programs and ensure that PMI programs receive effective replacement nets as soon as possible. A more detailed account of the project's response is provided in section C below.

RDTs

In FY 2019, the project managed pre-shipment inspections and testing of 73 orders, representing 91.5 million RDTs from three vendors. The project reviewed all test results before clearing orders for shipment.

The project contracted a World Health Organization (WHO)-designated laboratory to support lot testing of RDTs. Separately, another laboratory tested 42 batches for 18-month stability. Initial pre-shipment testing results were available 1 to 16 working days (an average of 11 days) after samples arrived at the laboratory; all results conformed to product specifications.

QA Indicators

In FY 2019, the project completed 84.5 percent of QA processes within estimated lead times in Q1, 80.3 percent in Q2, 74 percent in Q3, and 100 percent in Q4.

In Q2 and Q3, the project faced challenges in the turnaround time for QC testing. Delays were a result of an approximate 80 percent increase in workload in Q2 at the subcontracting laboratory compared with the previous quarter. This incident prompted TO2 QA to revisit its process of evaluating and choosing testing laboratories to include an emphasis on lab capacity. Based on product volume, TO2 QA may allocate testing to two subcontracting laboratories with overlapping capabilities. One of these laboratories would function as back-up when the primary laboratory is at full capacity or may perform a percentage of testing. In parallel to this strategy, TO2 QA is also providing support to subcontracting laboratories to assist them in building more efficient infrastructure. TO2 QA saw significant improvement in turnaround time and in Q4 FY 2019, lead times were met on 100 percent of the 97 orders in that quarter.

Scores for laboratory QA vendors fluctuated slightly throughout the fiscal year, and the percentage of QA investigation reports submitted within 30 days of outcome determination was 100 percent for all products for FY 2019 against a target of 90 percent. GHSC-PSM continued its commitment to transparency in the quality of pharmaceuticals it procures.

Additional details of QA results are provided in Annex I.

Other Challenges and Solutions

In FY 2019, GHSC-PSM implemented QC checks between a third-party lab and a supplier to address a gap the project identified during routine testing of ASAQ. It implemented similar checks across other method transfers as a preventative action in the process. The test method requires temperature control, which was initially omitted, resulting in OOS results. Going forward, method transfers will require vendor verification to close gaps in the method and ensure accuracy, precision and reproducibility of

method between manufacturer laboratories and the new GHSC-PSM database. This process will reduce the occurrence of OOS products due to method issues.

A.4 Improved Data Visibility

GHSC-PSM works to enhance visibility into supply chain data at all levels. At the global level, the project uses and works to improve several key systems to synthesize critical information on order status and priorities, commodity flows, central-level stock, facility stock-out and other data important for decision making. At the country level, the project has introduced and continues to improve data visibility systems that support effective management of commodities to improve public health.

ARTMIS

At the global level, visibility into GHSC-PSM procurement and delivery is provided through ARTMIS, the project's information system, to understand order status and establish priorities. External users—such as PMI, other USAID and GHSC-PSM field office staff—can view important performance information on procurement and delivery dashboards.

In FY 2019, the project continued efforts to enhance system efficiency, improve data quality and enable greater visibility into its supply chain operations. By incorporating malaria QA data from Microsoft Excel into ARTMIS, GHSC-PSM can now automatically pull order details into a web application and enter QA detail, reducing manual administration and increasing transparency in the process. The QA detail is also pulled into ARTMIS and is visible through the Report + Analyze module that supports management discussions, detailed QA tracking for the malaria task order and general performance through KPIs. Since KPI reports are presented quarterly, this automation is expected to yield significant efficiencies.

Other improvements to ARTMIS included:

- Adding requested delivery dates to the PDF printout of requisition orders.
- Adding dynamic updates of projected delivery dates based on shipment milestones to improve delivery date estimates.
- Creating a batch selection report in the Report + Analyze module to track recalled items.
- Incorporating freight estimate calculations into Websphere Commerce Suite (WCS).
- Continuing work to automate the Order Promise Tool.
- Adding an automated feed from the 1WorldSync Global Data Synchronization Network™ (GDSN®) to update the GHSC-PSM catalog with attribute data for catalog items from network suppliers.

End-User Verification

The EUV survey is a routine supply chain assessment for malaria; it also examines the diagnosis and treatment of malaria at the health facility level. Outputs include assessments on commodity availability, stock management and storage conditions, case management practices, and other characteristics in a random sample of facilities.

In the decade since its inception, stakeholders have come to rely on EUV data to address more complex questions. In the second half of FY 2019, and in consultation with USAID, GHSC-PSM harmonized the methodology and tools with actual use cases and created a standard package covering training, sampling, data collection, validation, analysis and reporting. Previewed by PMI and other USAID stakeholders at an EUV summit in March 2019, the new EUV package now includes a standardized questionnaire and site data collection tracker. Other elements of the package, to be implemented in FY 2020, are in process or under PMI review and include a survey protocol and guide, an analysis tool, a paper data collection tool and reporting templates, a sampling strategy guide, and training curriculum.

Over the course of FY 2019, 13 GHSC-PSM EUV implementing countries moved to the updated version of the survey, as have three GHSC-TA-Francophone Task Order countries (Benin, DRC, Senegal) and Côte d'Ivoire (IHSC-TA). Of the remaining countries, Burundi will move in January 2020, and Zimbabwe, which uses its own version of the tool, has incorporated some elements of the revision.

Procurement Planning and Monitoring Report for malaria

The Procurement Planning and Monitoring Report for malaria (PPMRm) is a quarterly report that collects and provides data on central stock and security updates on key malaria commodities from PMI-supported countries. It is used to identify stock issues, including potential stock risks, and assist with order prioritization and reconciliation.

By Q3 FY 2019, the PPMRm was managing data from 27 countries, with Niger and Sierra Leone joining in early in the year. In Q4, South Sudan stopped reporting in PPMRm due to closeout of malaria task order activities. Therefore, the number of reporting countries is now 26.

Throughout the year, PPMRm information assisted in confirming overstocks and understocks, resulting in corrective actions such as delaying, reallocating or expediting shipments. For instance, in Q1, Mali identified an SP stock shortage due to a tranche expiring the previous quarter, leading GHSC-PSM to assess options for mitigating the stock risk, including offering SP from the stockpile. The country accepted the offer, and in May an order of 1.7 million tablets (equivalent to 5.9 months of stock) was delivered, relieving the shortage.

Information from PPMRm continues to assist with order prioritization. For example, in Q3, due to risk of stock-out of ASAQ 25 mg/67.5 mg in Ghana, the project expedited an order to arrive in July 2019 to increase stock levels in time. In Nigeria, due to overstock of ASAQ, PMI shipments of ASAQ 100/270 mg 3 tablets and 6 tablets procured for Nigeria were transferred to Liberia. In Q4, due to risk of stock-out of ALu 6x1, the project in Guinea placed an emergency order and worked to accelerate its delivery.

Varying levels of visibility into shipment information from other donors creates challenges for countries in forecasting and supply planning (FASP). GHSC-PSM works with ministries of health and other partners to improve visibility into orders in the PPMRm to more accurately forecast country needs.

In early FY 2019, PMI and GHSC-PSM agreed to share data with other partners, such as Global Fund, to improve visibility into other donor shipments. PMI led PPMRm training with Global Fund staff, who now have access to the report. Also, due to various levels of data visibility, countries have been reporting different levels of stock on hand (SOH) and different types of average monthly consumption (AMC), as these were not standardized. In Q4, the project helped PMI explore the possibility of standardizing the report by conducting a survey with reporting countries. Results showed that 32 percent (8/22) of the

countries have been reporting central and subnational warehouse SOH, and 86 percent (19/22) are ready to use forecasted AMC. This information continued to inform internal discussions with PMI on whether to standardize the PPMRm report through the end of Q4.

TransIT

With engineering support from Arizona State University, in FY 2019 the project designed and introduced a low-cost, easy-to-use cloud-based transport management system that increases visibility across country supply chains to address last-mile delivery challenges.

Roads in rural Mozambique are almost impassable throughout the rainy season, which is also when mosquitoes abound. With TransIT, GHSC-PSM can track where deliveries are within the in-country distribution network, identify trends, and develop alternate route plans as needed. *Photo credit: GHSC-PSM Mozambique*

TransIT tracks location, metrics, performance, loss, and cost of commodities as they move through in-country distribution networks. An accompanying Android mobile application allows drivers to upload shipment information and a GPS stamp of their location. The app stores information off-grid and uploads it automatically when wireless and mobile networks are in range. An electronic proof of delivery application confirms delivery through receipts that are signed and archived electronically.

So far, GHSC-PSM has used TransIT in Angola, Cameroon, and Mozambique. Highlights include:

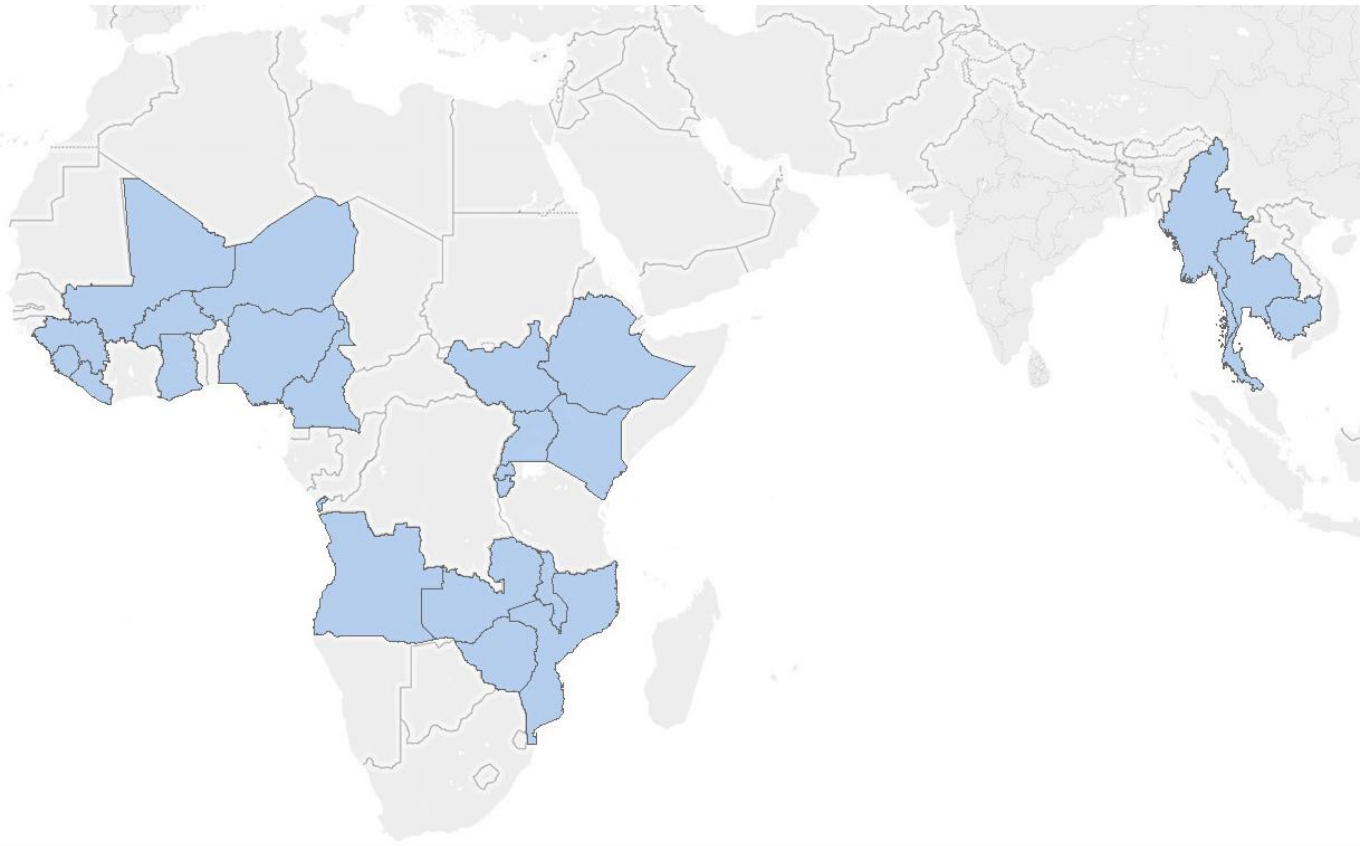
- In Angola, the tool helped reduce the cost and amplify the visibility of 235 deliveries over a three-month period, achieving 85 percent on-time delivery.
- In Cameroon, the tool informed route planning and other logistics for distributing more than 1.3 million LLINs to 153 health centers.
- In Mozambique, the tool tracked the geo-location of 64,700 LLINs delivered to 202 sites by 30 trained drivers.

> "The [GHSC-PSM] project seeks to modernize supply chain practices, adopt innovations and technologies that have become standard within the commercial supply chain, and improve end-to-end data visibility throughout the entire supply chain."
>
> *Mickael Breard*
> *Director of Warehousing and Transportation, Mozambique*
> *GHSC-PSM*

B. Strengthened In-Country Supply Chain Systems

GHSC-PSM works to help build sustainable country capacity in providing the right health commodities where they are needed, when they are needed. Sustainability implies that local entities can manage an effective and cost-efficient supply chain. The project's health supply chain systems strengthening (HSCSS) ranges from providing training and technical assistance to host governments and other supply chain entities to—in a few cases—seconding staff to the government to support supply chain functions. GHSC-PSM works to strengthen national supply chains and improve malaria commodity availability in 22 countries. The countries supported are shown in Exhibit 9 and listed in Exhibit 10

Exhibit 9. Countries receiving HSCSS support from GHSC-PSM with PMI funding



GHSC-PSM provides technical assistance to build local supply chain capacity based on global best practices, addressing critical components of a sustainable supply chain:

- Strategy and planning
- FASP
- Process improvement
- Warehousing and distribution
- LMIS
- Governance and leadership
- Workforce development

The project's technical assistance is provided by long-term staff in country offices and supplemented with short-term specialists from headquarters.

The extent of GHSC-PSM's HSCSS varies widely by country. Exhibit 10 shows the technical elements included in TO2 country work plans for FY 2019. The sections below feature examples of GHSC-PSM support in these areas and select achievements over the year.

Exhibit 10. PMI-funded HSCSS technical assistance by country

Country	Strategy & Planning	FASP	Process Improvement	Warehousing & Distribution	LMIS	Governance & Leadership	Workforce Development	M&E
Angola	x	x		x	x	x		
Burkina Faso	x	x		x	x		x	
Burma	x	x	x	x	x	x	x	
Burundi[2]	x	x		x	x			
Cambodia	x	x			x			
Cameroon	x	x		x	x	x	x	
Ethiopia	x	x			x			
Ghana		x		x	x	x	x	
Guinea	x	x		x	x	x	x	x
Liberia		x		x	x			
Malawi	x	x		x	x	x	x	x
Mali	x	x		x	x			
Mozambique	x	x		x	x	x	x	
Niger	x	x						
Nigeria		x		x	x	x	x	x
Rwanda		x	x	x	x		x	
Sierra Leone	x	x			x			x
South Sudan[2]	x	x		x	x			
Thailand	x	x			x			
Uganda		x	x	x	x			
Zambia	x	x		x	x	x	x	x
Zimbabwe	x	x		x	x	x	x	

B.1 Improved Strategic Planning and Implementation Related to Supply Chain Management and Commodity Security

Forecasting and Supply Planning Technical Assistance

In FY 2019, GHSC-PSM continued to provide technical assistance to develop and validate supply plans, aggregate commodity demand, and evaluate and reconcile seasonal demand with orders. GHSC-PSM's sustained efforts to support country supply planning is resulting in more countries becoming more self-reliant in executing this critical activity.

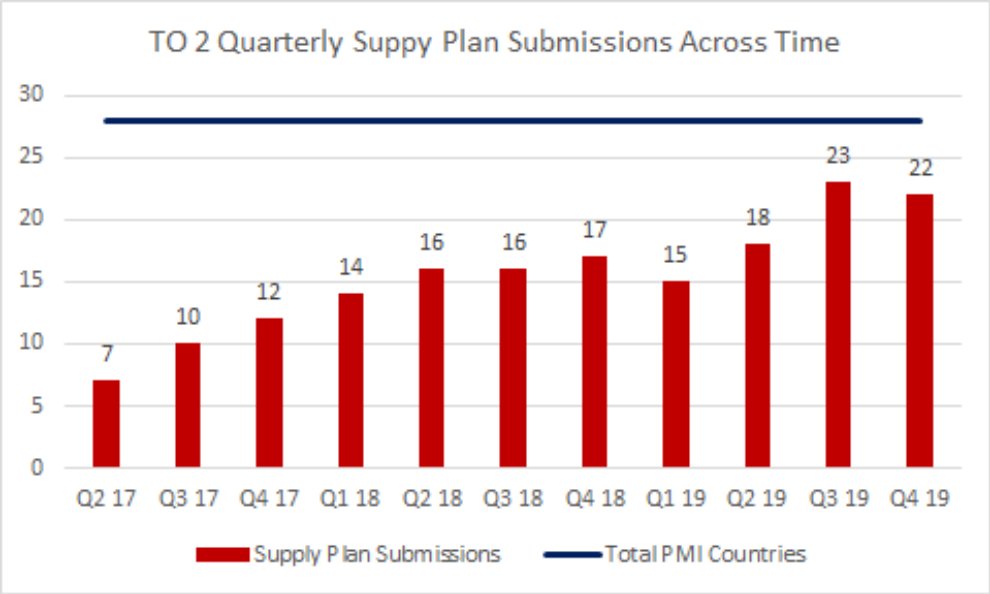
[2] Burundi and South Sudan malaria programming is supported by USAID.

Countries use supply plans, which analyze quantities of commodities that should be ordered in a specified timeframe, to help ensure continuous product supply. Supply plans also inform GHSC-PSM order planning, strategic sourcing and regional distribution center stocking decisions. Supply plan reviews ensure that the plans are procurement ready to drive continuous commodity availability.

To automate the review process, GHSC-PSM developed the Supply Plan Automation (SPA) tool. This tool pulls relevant datasets from the PipeLine supply planning software and assesses the plans against 16 criteria related to country planning, procurement, tool usage and data quality. Use of the tool slashes the review time per plan from 1 to 2 hours to minutes. It also allows key individuals—country directors/FASP leads in country, and PMU directors—to track country supply planning performance through an integrated dashboard.

Following the supply plan auto-review, SPA generates immediate feedback, flagging issues/discrepancies based on 16 standard criteria. Field teams can then make quick corrections to their supply plans before submitting them to the home office. In FY 2019, nine PMI countries were using the tool to review their data more critically and make improvements independently, deepening their insight into and understanding of data inputs and improving their ability to promote availability of commodities in their countries.

Exhibit 11. Supply planning submissions and technical reviews



GHSC-PSM continues to see growth in the submission of supply plans from PMI priority countries (those required to submit a malaria supply plan), reflecting expansion of the project's recommended approach through technical assistance interventions and frequent communication. An all-time high of 23 countries[3] submitted malaria supply plans in Q3 FY 2019, and 22 countries submitted plans in Q4 FY

[3] Countries include Angola, Benin, Burkina Faso, Burma, Burundi, Côte d'Ivoire, DRC, Ethiopia, Ghana, Guinea, Kenya, Liberia, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda JMS, Zambia, and Zimbabwe submitted in Q3 FY 2019. All except Senegal submitted again in Q4 FY 2019.

2019. PMI and GHSC-PSM continue to push toward a 100 percent submission rate for all 28 PMI-supported countries that are required to submit malaria commodity supply plans.

Supply Planning Technology

GHSC-PSM also contributed key modifications to tools used by country programs to forecast and develop supply plans. The project made improvements to Quantimed and PipeLine to enable users to migrate inventory, consumption and shipment data to the GHSC-PSM catalog nomenclature. This, in turn, merges supply plan data seamlessly with GHSC-PSM procurement and delivery information. The improvement in data governance allows all country supply plans to be aggregated for analysis and will support the use of the Early Warning System technology to provide visibility into stock risks for malaria products.

Forecasting and Supply Planning Technical Assistance

In FY 2019, the project assisted in forecasting and supply planning in over 20 countries. Examples of support follow.

Burundi
In FY 2019, GHSC-PSM conducted a supply planning review to assess expiration risks for two formulations of ASAQ tablets. Based on the findings, the country determined that additional procurements were not needed and instructed staff to closely monitor consumption to prevent potential expiries.

Ethiopia
The project supported the Federal Ministry of Health (FMoH) and the Ethiopian Pharmaceuticals Supply Agency (EPSA) in identifying the risk of a stock-out of artesunate injectable during a quarterly supply planning workshop. As a result, the EPSA accelerated delivery of an artesunate injectable shipment to mitigate the risk. FMoH and EPSA are becoming increasingly capable of completing their own quarterly procurement quantification exercises to ensure reliable supply.

Guinea
The project worked with Guinea's National Malaria Control Program (NMCP) to facilitate a workshop to analyze and validate stock levels, consumption and shipment data that revealed that three of four ALu formulations and RDTs were understocked. As a result, the country adjusted their supply pipeline to ensure continuous commodity availability. Delivery schedules were also accelerated to avert potential stock-outs.

Mali
The project collaborated with the malaria technical working group to project the usable and unusable ALu 6x1 and 6x2, normally used in children, for each facility from the central warehouse to the service delivery point level based on stock-on-hand, shelf-life and projected consumption. The NMCP then issued a circular to regions and districts advising them to use ALu 6x1 and 6x2 to treat adolescents and adults to avoid expiries. This action will save approximately 292,972 blister packs of ALu 6x1 and 204,148 blister packs of ALu 6x2 worth more than $179,000.

Logistics Management Information Systems Technical Assistance

In FY 2019, the project provided assistance in LMIS design and implementation in 21 countries. Examples of support follow.

Burundi
GHSC-PSM supported the Directorate of Pharmacies, Medicines and Laboratories (DPML) in improving the use of paper-based LMIS tools and organized quarterly meetings to review LMIS data. The project also collaborated with the DPML and other national counterparts to conduct a logistics data quality audit (DQA) in 54 health facilities. The DQA team found that overall data quality for malaria commodities was good. The DQA results will inform prioritization of ongoing support by national counterparts and partners. The exercise also built the capacity of DPML, who will lead the 2020 DQA. Also, the project helped DPML assess the LMIS design, resulting in the creation of a national electronic logistics management information system (eLMIS) strategy.

Cambodia
The project supported the National Centre for Parasitology, Entomology and Malaria Control (CNM) to develop a logistics management module in CNM's Malaria Information System as an interim stock and consumption data reporting mechanism while the government completes development of an eLMIS.

Ghana
The project continues to support Ministry of Health and Ghana Health Services (GHS) to implement the Ghana Integrated LMIS (GhiLMIS) that will provide quick access and visibility to critical supply chain data for reporting and decision making. The support includes: on-boarding facilities onto the system, providing supportive supervision and on-site assistance to strengthen facility capacity in the use of the system, auditing data quality to ensure data integrity and validity, working with relevant stakeholders to strengthen system governance, promoting data-driven decision making, and establishing a help desk to support users during the GHiLMIS rollout. The project completed the rollout of GHiLMIS to the central warehouses, 10 regional medical stores and four teaching hospitals in FY 2019. Rollout to the 299 planned facilities was completed in 2019, including 217 hospitals, nine health centers, 57 polyclinics, five teaching hospitals, 10 reginal medical stores, and a central warehouse.

Guinea
GHSC-PSM helped facilitate development of an implementation plan for interoperability between the country's District Health Information Software Version 2 (DHIS2) and eLMIS through an MOH workshop with technical partners to define functional requirements, map master lists in the two systems, and identify needed reports and dashboards. By Q4, the project assisted the MOH through the Bureau de Stratégie et Dévelopment (BSD) and Direction Nationale de la Pharmacie et du Medicament (DNPM) to successfully test the interoperability system including the use of a Fast Healthcare Interoperability Resources (FHIR) as a standard specification for representing and exchange of data between DHIS2 and eLMIS. GHSC-PSM also supported the finalization of the updated standard operating procedures (SOPs) for integrated logistics management of health commodities in Guinea that was approved by the MOH. The project also initiated a training of 34 trainers from the central level and 34 supply chain staff from the region of Kankan on the revised SOPs. When in use, the SOPs will further streamline operations of the Guinea public health supply chain at all levels, building on past successes while accommodating changes and enhancements required for successful implementation.

Also, GHSC-PSM supported resumption of the use of the country's upgraded warehouse management system at central and regional levels by addressing system and user-reported issues resulting from the upgrade. After GHSC-PSM provided Pharmacy Central of Guinea (PCG) training to facilitate remote transfer of data, the country completed its first data centralization operation from all regional depots to the main warehouse. Remote data transfer has eased reporting challenges for regional depots and enabled the country to compile, analyze and produce reports for stakeholders more quickly.

Malawi

GHSC-PSM assisted the MOH in engaging a local vendor to provide technical support to the end users of OpenLMIS. This will contribute to sustainability of system support in managing logistics data for malaria and other health programs. OpenLMIS is now used in 79 health facilities (approximately 11 percent of health facilities) in Malawi, including five central hospitals, 28 district hospitals and 46 health facilities (21 government and 25 Christian Health Association of Malawi (CHAM)). This follows the effort of identifying and training CHAM health facilities (in addition to the government public health facilities) that have the resources to implement OpenLMIS (i.e., having functioning computers, internet connection and staff who are computer literate).

Mali

In Mali, GHSC-PSM supported the interoperability of DHIS2 and OSPSANTE, the tracking tool for health products, to improve visibility and quality of data for malaria and other commodities. The project also provided desk support to keep the OSPSANTE tool running properly. GHSC-PSM supported the training of 29 participants from the north regions (Gao, Menaka, Taoudeni and Timbuktu) on LMIS SOPs, including paper-based LMIS, OSPSANTE and its interoperability with DHIS2 (malaria commodity data were entered in DHIS2 and transferred to OSPSANTE for data aggregation and reporting). The reporting rate was above 95 percent in FY2019.

Improved Data Use

In addition to LMIS development, the project helps countries improve data quality and use. Country-level activities are designed to maximize innovation while ensuring data quality, skills transfer and development, and making LMIS more useful for decision making. Country examples follow.

Burkina Faso

GHSC-PSM helped increase supply chain visibility through improved stock management and reporting by training 345 health facility head nurses on SOPs for the country’s integrated LMIS. Nurses will now join storekeepers as users of LMIS tools. Also, the project supported the National Public Health School in completing the review of its training curriculum that integrates LMIS SOPs for nurses.

Malawi

The project is formalizing a new initiative with the NMCP to improve data accountability and reporting at service delivery points. The initiative, known as Commodity Accountability Performance Tracking (CAPeT), identifies the cause for discrepancies between measured consumption (LMIS) and reported malaria cases (HMIS) at health facilities. Conducted quarterly by representatives from district pharmacies, the NMCP, and the GHSC-PSM field office, CAPeT analyzes discrepancies and supports the development of practical action plans. Health facilities are responsible for implementing the action plans; district health management teams use the analysis, findings, and action plans to monitor progress and inform supportive supervision and other follow-up activities. Responsibility for conducting CAPeT activities will transfer to district pharmacy professionals in FY 2020. This initiative is helping build health

facility ownership and accountability with a simple approach to root cause analysis and practical steps to address issues as they arise.

Nigeria
The project has been working with the MOH's Logistics Management Coordination Unit (LMCU) to collect, review and validate bi-monthly health facility LMIS reports in the 11 PMI-supported states. This effort has contributed to improving data quality and reporting rates to 99 percent. The LMCUs are now using the LMIS data to inform re-supply of malaria and other health commodities to health facilities and are mentoring health workers in the health facilities with LMIS data quality challenges.

B.2 Improved In-Country Logistics, Including Effective and Efficient Delivery of Health Commodities to Service Sites

GHSC-PSM supports the effective and efficient delivery of health commodities to service delivery points in two ways: first, by providing technical assistance to host governments for warehousing and distribution and, second, in some countries, by directly distributing commodities (often through contracts with in-country logistics companies).

Warehousing and Distribution Technical Assistance

GHSC-PSM promotes systematic, data-driven decision making to optimize in-country warehouse networks for increasing efficiencies in warehousing and distribution operations. In FY 2019, the project made progress on many fronts in PMI-supported countries.

Cameroon
During FY 2019, GHSC-PSM supported Regional Funds for Health Promotion (RFHP) in improving storage conditions in the North and Far North regional warehouses. GHSC-PSM and RFHP personnel conducted a walkthrough of the warehouses, revealing that space could be gained by dejunking and reorganizing the way commodities were stored. GHSC-PSM then applied a proven industry standard for workspace organization (the 5S methodology, i.e., Sort, Set, Shine, Standardize, and Sustain). By June, three of the 5Ss were implemented, freeing up 93.28 m^3 of space in the North region alone,[4] valued at about $4,204 monthly if it were rented. This support also created a conducive working environment that enables warehouse staff to practice good stock management. GHSC-PSM is supporting the RFHP in implementing the Standardizing and Sustaining steps of 5S. (See Exhibit 12 below.)

GHSC-PSM installed temperature sensors and air conditioners in three warehouses in the North and Far North regions to support storage of medicines within appropriate temperature limits, given that ambient temperatures in the regions often reach more than 30°C. The project also advised on temperature alert mechanisms to closely review temperatures weekly and deviations as they arise.

[4] The space saved in the Far North regional warehouse was not measured.

Exhibit 12. Cameroon's warehouse space optimization. *Photo credit: GHSC-PSM*

Before

Weekly Activities

After

Ethiopia

GHSC-PSM assisted three PFSA branch warehouses in improving their stock arrangement and inventory management through proper product sorting and zoning. These initiatives improved inventory accuracy and freed up space in aisles and dispatching areas. The project also supported the PFSA in enhancing inventory management at all branch warehouses. As a result, four branch warehouses conducted their regular stock count of malaria program products with 98 percent accuracy. The project also helped the country improve order synchronization and distribution, inventory control, automatic order replenishment, and timeliness and accuracy of health facility orders.

Liberia

GHSC-PSM supported the Central Medical Stores (CMS), a government-owned and project-supported warehouse for public health commodities, with the deployment of mSupply, a warehouse management system (WMS). The launch included a capacity building exercise for government employees on the use of the system and to enhance ownership and sustainability of the system. A physical inventory was conducted across the warehouse, improving visibility into the inventory of malaria and other health commodities. With the deployment of this web-based WMS, the NMCP and other arms of the MOH will have online access to view stock status and expiry dates of health products within the warehouse to guide decision-making on procurement and resupply of malaria products to 14 county depots and the clinics. It will further inform national dialogue of procurement timelines and product needs.

Malawi

Between September 2018 and March 2019, with funding from PEPFAR, PMI and the United Kingdom Department for International Development (DFID), the project spearheaded a major initiative to install an additional 239 pre-fabricated pharmacy storage units at health facilities in rural areas, including 117 facilities that are off the electrical grid that would be powered by solar. These facilities support up to 80 percent of people in rural areas (where many facilities are not connected to the electrical grid) without storage. The new units are equipped with a web-based system that monitors equipment functionality, along with temperature and security conditions, and alerts health center staff, district maintenance staff and community representatives through SMS text alerts. This type of constant remote monitoring is unprecedented in Malawi, as well as in many other parts of the world that lack rural electrification.

His Royal Highness the Duke of Sussex visits one of GHSC-PSM's 117 solar-powered storage facilities in Malawi. Funded by PEPFAR, PMI and DFID, these impressive warehouses are prefabricated and air-conditioned to hold lifesaving medicines. *Photo credit: Dominic Lipinski, AP*

Zimbabwe

The project worked with Zimbabwe Assisted Pull System (ZAPS) in Manicaland Province to improve stock management by redistributing overstocked malaria RDTs and short-dated ACTs to two district facilities. During the visit, the team also assisted the province with emergency logistics management of medicines for victims of Cyclone Idai.

LLIN Distribution

In FY 2019, many countries launched or continued large-scale LLIN campaigns as a key prevention strategy. These massive initiatives ensure beneficiaries, particularly in high-impact areas, receive the nets they need before the rainy season. Actual distributions can last a few weeks, while logistics, supply planning, procurement and pre-positioning can take months. Exhibit 13 below provides information on select large-scale LLIN campaigns supported by the project this fiscal year.

LLINs are transported by boat in Mozambique. *Photo credit: Randa Arra/GHSC-PSM*

Exhibit 13. Examples of the project's support to countries for LLIN distribution in FY 2019

Country	Type of Distribution	No. of Nets Distributed
Burundi	Routine distribution	764,150
Ethiopia	Mass distribution	5,100,000
Ghana	School distribution	1,350,000
Malawi	Routine distribution	340,840
Nigeria	Mass distribution in one state	2,349,727
South Sudan	Mass distribution	494,150
Zimbabwe	Routine and mass distribution	1,135,750

Burkina Faso

GHSC-PSM helped build logistics planning and management capacity prior to the LLIN distribution campaign in FY 2019. Three two-day training-of-trainers workshops were attended by more than 140 district pharmacists, pharmacist assistants and central-level staff responsible for logistics management in 13 regions. District pharmacists will, in turn, train head nurses and facility storekeepers on the new management tools to improve visibility into dispatch of LLINs to all supply chain levels and support distribution to households.

Cameroon

The project helped the MOH introduce cloud-based transportation analysis (TransIT) and electronic proof of delivery (ePOD) for its 2019 LLIN campaign. Information generated by these tools created instant progress report cards, enabling distribution managers to better track shipments, increase security and documentation and make informed decisions regarding distribution of 255,750 LLINs to 600 sites. (For more on TransIT, see section B.1 above.)

"Detailed planning in this campaign helped to ensure the allocation of adequate number of nets for the communities in the woreda."

Yasin Mohammed, head of the Samurabi Woreda Health Office in Afar Regional State and coordinator of health-related activities and campaigns, including

Ethiopia

The project helped introduce a web-based database to monitor distribution and track the movement of more than 4 million LLINs from customs clearance to four regional states/chartered cities. The database simplifies data aggregation, analysis and visualization, making data easier to use for decision making.

GHSC-PSM supported the FMoH in organizing five regional-level LLIN distribution consultations and orientation workshops to 412 health professionals from 86 woredas on the LLIN distribution process and providing 57 woreda-level orientations to 6,632 health professionals. The project worked with woreda health offices to determine the number, location and distance of health posts, and number of nets to be delivered to each health post/kebele. To arrange efficient transportation, the project, together with the woredas, mapped distribution routes and road networks and assessed security, availability of storage, and number and type of vehicles required. The project also supported woredas to transport nets with all

possible means of transport to the distribution sites, including by foot, truck, motorcycle, donkey, or boat.

The careful planning and preparation for the distribution campaign readied and motivated coordinators at the woreda level. This preparation was a key factor in the campaign's success.

Nigeria

The project helped expand distribution coverage and security by recommending the addition of new distribution points, real-time tracking devices and full-time guards in the state warehouse and during transport for the LLIN campaign that reached more than 7 million people. The government also enhanced protocols for screening and training and now has a database of more than 18,000 trained individuals who can be tapped for campaigns.

B.3 Increased Capacity Building by Implementing Strategies to Transfer Skills, Knowledge, and Technology for Improved and Sustained Performance

GHSC-PSM transfers skills, knowledge and technology through technical assistance in workforce development and training. This section describes work in these areas.

Workforce Development Technical Assistance

GHSC-PSM builds sustainable workforces through professionalization and systematic approaches to workforce development, putting countries on a path to self-reliance. Interventions include in-service and pre-service training, supportive supervision or mentoring, leadership, and change management competencies.

In FY 2019, the project launched two new initiatives supporting workforce development at the global level:

- Piloting the People that Deliver theory of change for supply chain workforce management in Rwanda. GHSC-PSM shared results with development partners, including the Bill and Melinda Gates Foundation-funded African Resource Centre and the Global Fund, to inform their supply chain workforce strengthening.
- Holding the fifth in a series of global webinars on supply chain professional workforce development for

LMIS and Skills Strengthening Trainings for a Self-Reliant Workforce

GHSC-PSM provided LMIS training to:

- 648 warehouse staff in Cambodia
- 50 Public Health School graduates entering the health workforce in Burkina Faso

GHSC-PSM provided skills strengthening training to:

- 38 students in Burundi, covering supply chain best practices

development partners and country governments focused on career paths and professionalization.

The project also delivered the annual Introduction to Supply Chain Management (SCM) and the Emerging Trends in SCM courses to USAID personnel, with a focus on advanced assessment tools, emerging trends, and the expanding roles of the private and public sectors in supply chain management.

Specific country examples follow.

Burkina Faso

The project successfully trained 50 National Public Health School teachers to administer the LMIS standard operating procedures course to students, including pharmacist assistants, logisticians, nurses, midwives and nurse aids. This training was integrated into the pharmacist assistant and logistician course modules for the academic year. In Q3, with financial support from PMI, GHSC-PSM provided five desktop computers to the National Public Health School in Ouagadougou to be used in conjunction with the training. Also, the project printed and provided 700 copies of the integrated LMIS SOPs to 68 health schools to support teaching the LMIS modules in these schools.

USAID hands over 700 copies of the integrated LMIS standard operating procedures and five desktop computers to the Director of the National Public Health School in Ouagadougou. *Photo credit: GHSC-PSM*

In Q4, the project organized a workshop with Burkina Faso's National Public Health School to review its pre-service training curricula and integrate training materials on LMIS SOPs. The project finished reviewing the nurses training curriculum, with review of the midwives' curriculum scheduled for Q1 FY 2020.

Burundi

To better prepare graduates from the National Institute of Public Health (INSP) entering the health workforce, GHSC-PSM supported the INSP in conducting a four-day pre-service training on SCM best practices. INSP developed training modules in FY 2018 with GHSC-PSM technical support. Since then, a total of 38 students (19 each from the pharmacy and laboratory branches) were trained on best practices in pharmaceutical and laboratory commodities management.

Nigeria

The project helped the Ministry of Health alleviate one of the greatest challenges in executing successful SMC campaigns by building workforce capacity. GHSC-PSM helped create a database of more than 18,000 individuals ready for future campaigns, as well as enhanced protocols for screening and training.

Rwanda

GHSC-PSM piloted the People that Deliver theory of change for supply chain workforce management to

help the MOH prioritize investments for improving the availability of skilled SCM cadres and monitoring the performance of human resources systems. The ministry is considering findings from the survey to inform its efforts to strengthen supply chain workforces. GHSC-PSM has shared findings with other development partners, such as the Bill and Melinda Gates Foundation (BMGF)-funded African Resource Centre and the Global Fund, to inform their efforts as well.

Number of Trainees

Over the course of FY 2019, GHSC-PSM continued to train in-country specialists in the full range of supply chain health systems strengthening areas. A total of 17 PMI-supported countries received training with PMI funding (either exclusively funded by the malaria task order or co-funded by the malaria task order and other health areas).

In FY 2019, 4,147 staff received malaria task order–funded and co-funded training from GHSC-PSM in health supply chain systems strengthening (see Annex L).

In total, 1,736 people were trained exclusively with malaria task order funding on malaria-specific supply chain issues, 33 percent of whom were female and 67 percent, male. The countries with the most malaria task order–funded training recipients were Nigeria (1,447 individuals) and Burkina Faso (586 individuals). (Please see Annex L for details.)

B.4 Strengthened Enabling Environments to Improve Supply Chain Performance

GHSC-PSM works to strengthen enabling environments for improving supply chain performance through technical assistance in supply chain leadership and governance. The project also supports strategy development and strategic planning to improve supply chains. These strategies reflect findings from country-level assessments, including national supply chain assessments (NSCA) and end-use verification (EUV) surveys.

Leadership and Governance

GHSC-PSM's governance work seeks to build supply chain systems led by a strong team with managerial capacity, institutionalized checks and balances, and robust governance oversight, including accountability and transparent financing. Examples of GHSC-PSM's work are provided below.

Burma
The project, in collaboration with supply chain stakeholders, supported the MOH in developing its National Supply Chain Operational Plan (NSCOP). By the end of FY 2019, the final draft of the NSCOP had been presented to all stakeholders for final review. The project also provided support to the MOH in facilitating an inception workshop to develop the National Strategic Plan for Malaria (2021–2025). The draft malaria strategic plan is being vetted with stakeholders for feedback.

Cameroon
The project initiated a leadership training course for the 26 members of the central and regional teams from the Far North and North RFHP. The intensive eight-month course helped build staff capacity in managing workplace challenges, building teams, and aligning visions.

Ethiopia

GHSC-PSM continues to support EPSA's major institutional change process in streamlining its malaria and other pharmaceutical supply chain activities. In FY 2019, the project worked with EPSA in implementing a quality management system (QMS) to improve business processes and their management at EPSA. In Q3 FY 2019, GHSC-PSM organized a QMS workshop to orient EPSA on ISO 9001:2015.

Also, GHSC-PSM, in collaboration with the regional health bureaus (RHBs), scaled up Auditable Pharmacy Transactions and Services (APTS) implementation, which monitors malaria product availability and pharmacy services at service delivery points (SDPs). By the end of FY 2019, 189 health facilities implemented APTS throughout the country, of which 112 initiated APTS implementation with GHSC-PSM support since the start of the project. The project supported the Oromia and Amhara RHBs in using APTS. The project also supported MOH in scaling up the APTS principles to a software system (eAPTS). The goal was to resolve the workload issues related to the manual system so that antimalarial stock management, dispensing and related patient care services can be automated.

Ghana

The project continued to support regional supply technical working groups (TWGs). These groups are increasingly serving as the mechanism for coordinating and transitioning key initiatives, including last-mile distribution, framework contracting and LMIS implementation, to the government. With project support, TWGs were constituted and inaugurated in all 10 regions of the country in February. In August, the MOH technical TWG completed implementing the National Supply Chain Assessment to serve as an input to the 2019–2021 malaria quantification review report.

Guinea

The project used geographic information system (GIS) technology to map private pharmaceutical settings (drug wholesalers, pharmacies, drug promotion agencies, etc.) in all eight regions of the country. Carried out with support from trained students from local universities, the exercise found that 75 percent of the country's 811 pharmaceutical institutions were operating without appropriate licenses and that nearly 50 percent of private pharmacies were managed by unregistered pharmacists. The MOH is using these data to inform 20 new national policies that promote properly regulating private pharmacies and address other compliance issues. Regulations include a ministerial order establishing conditions of ownership and functionality of pharmaceutical wholesalers and distributors and creating the Medicrime Repression Brigade, tasked with investigating potential violations.

GHSC-PSM worked with local universities to train and mobilize students as data collectors to map the private pharmaceutical settings. *Photo credit: GHSC-PSM.*

Rwanda

The project helped launch the Board of Directors of the Food and Drugs Authority (FDA) in February 2019. GHSC-PSM supported the Rwanda FDA in developing and validating regulations, guidelines and procedures. By the end of Q4, 10 key regulatory documents were reviewed and approved by the board of directors. The project also worked with the FDA to develop and validate a drug pricing policy and reviewed the shelf-life policy and its implementation. These policy documents were shared with MOH for endorsement.

Country Assessments—National Supply Chain Assessment

The NSCA is a diagnostic toolkit that identifies strengths, potential bottlenecks and opportunities for improvement within a health supply chain. Developed in 2012 and recently updated to version 2.0, NSCA can prioritize areas for root-cause analysis and inform development of strategic and operational plans to strengthen systems. NSCA 2.0 has three components: supply chain mapping, to provide a visual representation of the country's supply chain; a capability and maturity model, to measure the supply chain's overall capability and functionality; and key performance indicators, to measure performance.

In September 2019, GHSC-PSM completed translating the new NSCA 2.0 toolkit into French. The toolkit will be available on the GHSC website by the end of Q1 FY 2020 for public use. GHSC-PSM completed NSCA implementations in Guinea and in Ghana. Fieldwork in Guinea was conducted in June 2019. The assessment aimed to assess the government's progress to date on their National Strategic Pharmaceutical Sector Plan, identify gaps in implementation, and provide recommendations to course correct and ensure successful implementation of the strategic plan's goals by 2024. Fieldwork in Ghana was conducted in August of 2019.This assessment was designed to measure progress in completing Ghana's 2016–2020 Supply Chain Master Plan (SCMP) and to provide a broad evidence base for

developing the next SCMP for 2021–2026. GHSC-PSM will also be supporting this process for the Government of Ghana in FY 2020.

Country Assessments—End-Use Verification Surveys

EUVs are becoming an increasingly routine technique for monitoring stock availability, addressing stock management challenges, and assessing potential reasons for stock-outs. In FY 2019, 17 countries conducted EUV surveys, some with headquarters support.

Exhibit 14 below summarizes a key performance indicator, "percentage of health facilities with the number of ALu presentations available on the day of visit." This indicator measures the ability to treat uncomplicated malaria with the most commonly used first-line antimalarials (i.e., of four presentations of ALu [6x4, 6x3, 6x2, 6x1], at least one presentation is available to substitute other presentations).

Of the 17 countries conducting the EUV survey, 11 countries conducted it twice; one country, three times; two countries, four or more times; and three countries, once. A total of 13 countries have finalized one or more of their reports. These activities were supported by GHSC-PSM or GHSC-TA Francophone TO.

The data showed that the percentage of health facilities with zero presentations (inability to treat) ranged from 0 percent to 13 percent in seven of eight countries. At least 90 percent of the facilities visited in seven countries had at least one presentation of ALu available to treat malaria patients. Also, in Burundi (May 2019) and Ghana (Feb 2019), field offices reported on the ability to treat in one indicator, i.e., "percentage of health facilities (HFs) that had any ACT (ASAQ or ALu) available on the day of visit" at 89 percent and 93.6 percent, respectively.

Exhibit 14. ALu index of availability based on day of visit

Country	No. of HFs visited	4*	3*	2*	1*	0*	Note
Burkina Faso (March 2019)	80	50%	31%	13%	6%	0%	
Burkina Faso (September 2019)	80	21%	25%	38%	13%	4%	
Cameroon (April 2019)	24 (2 PMI regions)	29%	25%	29%	4%	13%	Data not available for 81 HFs in non-PMI targeted regions
Ethiopia (Feb 2019)	98	10%	38%	28%	21%	3%	
Liberia	86	42%	19%	16%	16%	7%	ASAQ also used

(March 2019)							
Mali (April 2019)	79	39%	42%	15%	4%	0%	
Mozambique (June 2019)	66	44%	24%	14%	6%	12%	
Niger (April 2019)	60	67%	14%	7%	9%	3%	Two regions (Dosso and Tahoua)
Nigeria (August 2019)	110	71%	15%	6%	5%	3%	
Zambia (Feb 2019)	40	65%	22.5%	5%	2.5%	5%	
Zambia (May 2019)	40	47.5%	27.5%	17.5%	7.5%	0%	
Zambia (August 2019)	40	45%	30%	15%	10%	0%	
Zimbabwe (May 2019)	39	61%	31%	3%	5%	0%	ASAQ also used. The data represent only malaria-endemic zones.

* Number of presentations available

** ASAQ = artesunate + amodiaquine

The project shares the EUV reports and recommendations with the MOH, NMCP and other stakeholders to inform decision making. Results from this process are presented below.

Burkina Faso

The MOH has been using EUV survey findings and recommendations to address supply chain issues. For example, after the September 2018 and March 2019 surveys, the MOH continued LMIS training for nurses and drug managers and began a training-of-trainers initiative on malaria case management for district chief medical officers. The NMCP, during its supportive supervision, reminded health facility staff to adhere to the guidelines for routine distribution of LLINs for children under age one. Also, the Directorate of Supply Chain Management of Health Products, or DCAPS, has developed guidelines and

tools for monitoring temperature in district stores and initiating reminder notes to health facilities on the importance of keeping all ALu available and updating stock cards.

Ethiopia
Following EUV surveys' recommendation, the Pharmaceutical Fund and Supply Agency (PFSA), with support from GHSC-PSM, continued to identify branch warehouses and SDPs with excess antimalarial medicines and conduct stock transfer to warehouses/SDPs with shortage/stock-out of the same medicines.

Nigeria
The December 2018 EUV survey revealed that less than 50 percent of technical staff were trained in case management and stock management, and some stock management practices were not adhered to, such as first to expire, first out and temperature monitoring. From the EUV findings, the project supported 11 State Logistics Management Coordinating Units (SLMCUs) in developing an intervention matrix for guiding actions to address identified gaps. The project also developed training videos on the Malaria Commodity Logistics System (MCLS) as job aids to ensure sustained access to relevant technical information by health workers and other stakeholders.

B.5 HSCSS Indicators

Availability of commodities at SDPs is a key measure of country-level supply chain performance. Annex M shows the stock-out rates at SDPs in malaria task order countries where GHSC-PSM provides technical assistance. This indicator determines the prevalence of commodity stock-outs (meaning either the commodity is unavailable, or it is available but unusable due to damage or expiry) at SDPs. GHSC-PSM does not deliver to the SDP level in most countries, nor does it provide technical assistance to all levels of the supply chain in all countries. Unless otherwise noted, the tables in the annex reflect stock-out rates at *supported sites*—which is where GHSC-PSM is implementing technical assistance at the first subnational level and project interventions have a reasonable chance of affecting stock-out rates.

Annexes N and O provide supplemental information on GHSC-PSM HSCSS performance, including stocked-according-to-plan and SDP reporting rates to the LMIS.

C. Effective Global Collaboration to Improve Long-Term Availability of Health Commodities

GHSC-PSM's global collaboration activities support USAID's and PMI's leadership and participation in important global supply chain fora. They also provide leading-edge research to help shape global markets for health commodities, share supply chain information with other donors and collaborators as a global good, ensure that the project's supply chain stays current with emerging requirements, and effectively manage and share knowledge of best practices and lessons learned.

C.1 Improved Strategic Engagement with Global Partners to Ensure Appropriate Strategic Coordination

Due to the scale, scope and complexity of malaria as a global health challenge, global collaboration—sharing information, resources, activities and capabilities—is essential. GHSC-PSM collaborates with global stakeholders and subject matter experts to address malaria commodity production, QA and procurement challenges.

Collaboration on QA

Early in FY 2019, GHSC-PSM was notified of critical management failures at an LLIN manufacturer. These failures may have compromised the long-term quality of 45 million nets procured for PMI and manufactured between January 2017 and April 2018. Most of the nets, which were distributed to end-users, were believed to provide a physical barrier of protection. However, they may have insecticide concentrations resulting in lower effective lifespans and may need to be replaced sooner than the normal three-year duration.

During the period in question, all batches were compliant when tested pre-shipment. But post-shipment tests identified some batches procured for Ghana, Mozambique, Nigeria and Uganda with insecticide levels that were OOS. Based on these results and subsequent reporting by the manufacturer of a management system breakdown, GHSC-PSM took the following steps, in collaboration with PMI and other global stakeholders, to minimize disruption to PMI programs and ensure that PMI programs receive effective remedies as soon as possible:

- Providing information to PMI to notify all PMI countries of potential issues.
- Working with the manufacturer to understand the root cause of the OOS.
- Collaborating with the WHO Prequalification of Medicines Team for Vector Control, or PQT-VC, to determine next steps that meet project objectives and provide protection from malaria-carrying mosquitoes to people who need it.
- Developing an expanded protocol for post-shipment sampling and testing of procured nets, in collaboration with GHSC-QA contractor (FHI 360) and GHSC-PSM's LLIN QC laboratory.

- Developing a custom mathematical optimization model to inform future LLIN market risk assessment, support operational decision making, and inform development of a new LLIN sourcing strategy.

In September 2019, GHSC-PSM QA participated in The Global Fund LLIN Supplier and Partner Meeting in Singapore. PMI, UNICEF, WHO Vector Control and LLIN manufacturers/suppliers also attended the meeting. Donors discussed quality requirements and allocation strategies for LLINs and made recommendations on manufacturer QMS requirements to foster better understanding of manufacturing processes among global donors.

Collaboration on Global Standards—GSI

End-to-end supply chain data visibility is a key challenge for USAID/Washington and USAID-supported countries. Fragmented systems (both in country and among procurement agencies), lack of standards-based identification, and heavy reliance on manual data reduce supply chain efficiency and pose risks to security—particularly theft, diversion, and introduction of substandard and falsified medicines, which are exacerbated for product categories such as ACTs.

Global standards are becoming a strategic supply chain enabler for numerous industries across the globe. Adopting these standards is a central part of the GHSC program to reduce costs, enhance efficiencies and improve the availability of health commodities worldwide.

In January 2018, GHSC-PSM implemented new requirements for suppliers of pharmaceuticals, medical devices, laboratory reagents, and sterile kits to identify and label commodities in accordance with GS1 global standards for healthcare. The requirement includes exchanging product master data through the GS1 Global Data Synchronization Network (GDSN) and has three phases.

In Phase 1, mandated by December 30, 2018, suppliers needed to submit Global Location Numbers (GLNs) identifying their business entities; Global Trade Item Numbers (GTINs) identifying their items and various levels of packaging; and label the tertiary pack trade item with a barcode encoded the GTIN, batch/lot and expiration date.

At the end of Q4, GHSC-PSM had received GLNs for 70 percent of in-scope malaria task order manufacturers and GTINs for 68 percent of in-scope malaria task order trade items. Of the in-scope items, 60 percent complied with the tertiary pack labeling requirement. Malaria RDTs and ACTs were 100 percent compliant with Phase 1 requirements. GHSC-PSM is also synchronizing master data with three suppliers of malaria commodities before the December 2019 Phase 2 deadline.

Exhibit 15. Compliance with Phase 1 GSI requirements, FY 2019

Malaria RDTs	100%
ACTs	100%
Severe malaria medications	58%
SP	50%
SMC	43%
Other Pharma	15%

While compliance is below target for the end of FY 2019, measures are in place for achieving targets in FY 2020. GHSC-PSM underestimated resources needed in FY 2019 to drive supplier engagement and decided to focus on GS1 compliance for core commodity groups. This resulted in100 percent compliance for the core malaria task order categories of malaria RDTs and ACTs, with lower-volume commodities lagging. To mitigate similar risks in FY 2020, a team of three full-time resources will focus solely on further integrating GS1 compliance into global supply chain performance initiatives.

GHSC-PSM promotes high-performing suppliers through the project website based on the project's GS1 supplier scorecard for suppliers of malaria pharmaceuticals (https://www.ghsupplychain.org/GS1supplierscorecard) to incentivize compliance by competitors. GHSC-PSM will update the scorecard quarterly and publish results on the project's social media channels.

Global Engagement

The last year has seen significant advocacy work to align donors and procurement agents around a common set of standards and procurement requirements. Project activities included:

- Leading development and publication of the Global Standards Technical Implementation Guideline for Global Health Commodities, a milestone in procurement harmonization endorsed by the Global Drug Facility (Stop TB), Global Fund, United Nations Development Programme (UNDP), United Nations Population Fund (UNFPA), and USAID.
- Co-hosting three supplier webinars (October, February, September) with 1WorldSync on data synchronization requirements in advance of the December 2019 Phase 2 deadline. Participants included manufacturers, wholesalers, GHSC-PSM staff, and other international procurement agencies including Global Drug Facility (Stop TB), Global Fund and UNFPA.
- Supporting USAID in hosting GS1 Day before the semi-annual Intragency Supply Chain Group (ISG) meeting in Washington, DC, to review joint requirement and contract language, global compliance, and the global technical approach for pharmaceutical traceability and discuss and align activities and support across country programs.
- Launching the TraceNet working group in May 2019 to establish GS1 global health procurement requirements for enabling identification, data capture and data exchange for LLINs. By coordinating nine working sessions in FY 2019, the project obtained consensus on recommendations for LLIN identification data attributes and data capture labels for the product and packaging level hierarchy. TraceNet is chaired by USAID and the Global Fund and consists of representatives from GHSC- PSM, country program field offices, GS1, and ten LLIN manufacturers. A harmonized procurement requirement and implementation plan is expected by the end of calendar year 2019.

The 2nd African GS1 Conference took place in Lagos, Nigeria, in September 2019. Attendees included 287 participants from 43 countries. Among the participants, 34 African countries were represented. Participants convened and discussed the latest in in traceability standards to ensure the safety and quality of health commodities in the global supply chain. *Photo credit: 2nd African GS1 Healthcare Conference official website.*

To further support global alignment, GHSC-PSM promotes USAID's thought leadership on GS1 standards in global and national supply chains by sharing developments and emerging practices, and at international fora attended by manufacturers, logistics providers and solution providers. Key activities over the course of the fiscal year included:

- Global GS1 Healthcare Conference – Bangkok, Thailand (November 2018). Presented on the applicability of standards in LLMICs, GHSC-PSM's global technical approach, and advocacy for manufacturer adoption of GDSN for sharing master data.
- Global GS1 Healthcare Conference – Noordwijk, Netherlands (March 2019). Co-presented with IDA Foundation on compliance, challenges /lessons learned, and opportunities for using GDSN for exchange of master data.
- ICT4D Conference – Kampala, Uganda (April 2019). Participated in a panel on authentication and verification solutions in sub-Saharan Africa to advocate for standardized solutions to leverage and scale across countries and product categories.
- Health and Humanitarian Logistics Conference – Kigali, Rwanda (July 2019). Presented on master data, USAID's and GHSC-PSM's leadership in

> "The Call to Action states the case—in clear language developed by Africa's regulatory leaders—for adoption of global standards for medicine traceability. We are watching with real admiration the commitment made today to medicine quality. This is Africa's time to shine."
>
> *Tom Woods, World Bank's Chairman of the Global Steering Committee for Quality*

advancing global standards and pharmaceutical traceability.

- 2nd African GS1 Healthcare Conference – Lagos, Nigeria (September 2019). Supported development of the Call to Action presented by National Agency for Food and Drug Administration and Control (NAFDAC); participated in a panel on harmonizing traceability requirements; co-presented with Rwanda FDA on GHSC-PSM's traceability framework and Rwanda's implementation; and organized and moderated a panel of regulators from Nigeria, Kenya, Zambia, Malawi and Rwanda on their traceability initiatives.

Country Progress

GHSC-PSM is actively promoting and helping countries prepare for GS1 adoption. In March, the project launched the Implementation Guidance for Pharmaceutical Traceability: Leveraging GS1 Global Standards, a public document available in French and English. The document is designed to serve as GHSC-PSM's initial global technical approach for global standards and traceability and to provide guidance to country programs in operationalizing a vision and strategy for pharmaceutical traceability. This document is complemented by a Global Standards and Traceability overview, produced in June, describing the approach, outcomes, illustrative activities, and resources.

Throughout FY 2019, GHSC-PSM provided technical assistance to assist several countries in advancing the use of GS1 global standards. These efforts included:

- Angola: Conducting a national workshop to develop a vision, strategy and roadmap for implementing GS1 standards in the health sector attended by 60 participants.
- Ghana: Continuing to work with the MOH LMIS subcommittee to standardize the master data model leveraging GS1 identifiers and GDSN attributes.
- Malawi: Documenting requirements for a GSI-enabled national product registry and supporting identification of requirements for interoperability and data governance; creating awareness of GS1 standards through one-on-one health sector stakeholder meetings; co-hosting and facilitating a national pharmaceutical traceability workshop with MOH and PMPB attended by 35 participants.
- Nigeria: Supporting NAFDAC in advocacy and awareness of GS1 standards with health sector stakeholders; co-hosting and facilitating a national pharmaceutical traceability workshop with NAFDAC and MOH attended by nearly 100 participants.
- Rwanda: Providing support for capacity development to Rwanda FDA on the key concepts of GS1 standards, selecting a traceability model, and beginning to define regulatory requirements to support implementation.
- Uganda: Assessing current processes and technologies for automatic identification and data capture (AIDC) barcode scanning leveraging GS1 standards.
- Zambia: Creating awareness of GS1 standards through one-on-one health sector stakeholder meetings; co-hosting and facilitating a national pharmaceutical traceability workshop with MOH and ZAMRA attended by 43 participants from the public and private sectors.

C.2 Global Market Dynamics Research and Innovations Conducted, Shared and Implemented

As described in section A.1, GHSC-PSM conducted market analyses for informing malaria commodity sourcing activities to help ensure stronger, healthier, more sustainable markets in the long run.

Support to Global Access Pricing Discussions
GHSC-PSM and PMI are collaborating with BMGF, IVCC and MedAccess to develop market-based strategies to improve the affordability of newer net technologies. This includes nets manufactured with more than one active ingredient (dual active ingredient, or dual AI, nets) to help combat malaria-carrying mosquitoes resistant to nets treated with only a single pyrethroid. In the first half of FY 2019, GHSC-PSM participated in discussion forums and one-on-one brainstorming sessions with external partners to convey the procurement perspective and inform strategies and help improve affordability.

In the second half of FY 2019, GHSC-PSM formalized a mechanism through which IVCC will subsidize a portion of the cost of the nets paid for by PMI to facilitate the purchase of dual AI nets by GHSC-PSM. Through access to co-payments provided by IVCC, GHSC-PSM will be able to procure dual AI nets for countries dealing with substantial resistance to the single pyrethroids currently used in insecticide-treated nets at a more affordable price.

Analysis of Active Pharmaceutical Ingredient Import-Export Data from China
GHSC-PSM continued to leverage sales data for export of raw materials, starting materials and active pharmaceutical ingredients used by health commodity manufacturers. Data were used to support the development of negotiation strategies and benchmark costs for critical product areas, including various pack sizes and formulations of ACTs. Data were also used to track and validate the market information shared by suppliers, particularly for the products SP and SPAQ.

LLIN Market Risk Assessment
GHSC-PSM completed a thorough LLIN market assessment and developed a customized mathematical optimization model to support scenario analyses to inform future LLIN market risk assessments, support operational decision making and inform development of the new LLIN sourcing strategy.

Other Global Innovations

As documented throughout this report, at the central and country levels, GHSC-PSM is testing and promoting new approaches to ensure availability of lifesaving commodities for the people who need them. Illustrative innovations include:

- **Establishing strategic LTAs** with suppliers to enhance ongoing procurement for most malaria commodity categories.
- **Updating the EUV tool** to harmonize the methodology and tools with its actual use and create a standard package for all countries covering training, sampling, data collection, validation, analysis and reporting (see more on EUV in section B.4 above).
- **Executing a second RDT allocation strategy** emphasizing country-agnostic, fixed-price contracts whose benefits include cost savings, reduced price fluctuations, increased supplier diversity and greater long-term availability.

- **Pre-positioning antimalarials and SPAQ** in the Belgium RDC to better respond to emergency needs and ensure delivery in time for seasonal malaria chemoprevention campaigns

C.3 Improved Awareness and Advocacy to Improve Availability of Essential Health Commodities

GHSC-PSM participated in the American Society of Tropical Medicine and Hygiene Annual Meeting in New Orleans, LA, and the Global Health Supply Chain Summit (GHSCS) in Lusaka, Zambia. At both meetings, the project presented on Cameroon's case study on using GIS tracking in supply chain management.

The project also presented on activities co-funded by the malaria task order at GHSCS, Information and Communication Technologies for Development (ICT4D), and the 2019 Health and Humanitarian Logistics Conference (HHLC), including:

- Ethiopia's low-cost, high-impact quick-win intervention to improve stock availability (GHSCS)
- Optimizing the USAID Global Health Supply Chain Network: A journey of supply chain transformation (GHSCS)
- From three to one: Benefits of donor health supply chain integration, the Nigeria experience (GHSCS)
- Global standards for product authentication and data visibility (ICT4D)
- Supply chain optimization and analytics applications in public health supply chains (ICT4D)
- Emergency response efforts in supply chain: A case study and lessons learned in Mozambique (HHLC)
- The journey to self-reliance: The story of a public-private partnership to achieve pharma-compliant warehousing for public health commodities in Nigeria (HHLC)

Winner of the 2018 GHSCS Accelerating Global Health Supply Chain Excellence Award

Mozambique's Ministry of Health and GHSC-PSM, in collaboration with the Clinton Health Access Initiative and VillageReach, received the Accelerating Global Health Supply Chain Excellence Award for the best innovation at the 2018 Global Health Supply Chain Summit.

The award recognized the cloud-based OpenLMIS tablet application, Sistema de Informação para Gestão Logística nas Unidades Sanitárias (SIGLUS), which allows for faster, automated reporting for local health facilities and easier data management at all levels. With SIGLUS, critical consumption and stock data are available in real time to inform distribution activities, strategic decisions, and FASP. Judges noted that the scope, expansion, and government leadership in all aspects of the SIGLUS rollout distinguished this innovation from others presented at the conference.

In addition to presentations at ICT4D and HHLC, the GS1 team made presentations at the Global GS1 Healthcare Conferences in Bangkok, Thailand, and Noodwijk, Netherlands, as well as the 2nd African GS1 Healthcare Conference in Lagos, Nigeria, as described in section C.1.

C.4 Improved Coordination and Collaboration Among Health Areas Within the IDIQ and Other USAID Global Health Supply Chain-Funded Activities

GHSC-PSM promotes and benefits from collaboration across the four health areas supported by the project contract and with other GHSC-funded activities.

At the central level, GHSC-PSM uses the scale of its work across multiple health areas to benefit all task orders. Significant cost savings related to infrastructure (the RDCs and contracts with 3PL service providers) are possible due to the project's economies of scale.

The project built the information system used to manage its supply chain, known as ARTMIS, with funding from all health areas. This system can pinpoint and track progress in addressing procurement issues in individual health areas. To further improve ARTMIS for the malaria task order, the project moved QA data from a Microsoft Excel program in FY 2019 to ARTMIS, further enhancing data visibility. Shared funding also allows for specialized support, such as for market dynamics, knowledge management and communications, and M&E.

Combined, the four health areas co-fund important, globally relevant innovations, such as global standards implementation. In FY 2019, the project finalized and published the Global Standards Technical Implementation Guideline for Global Health Commodities, a key resource that will help achieve procurement harmonization across the donor community. Several major procurers endorsed the guideline, including PMI, the Global Drug Facility (Stop TB), the Global Fund, UNDP, UNFPA and USAID.

Numerous health programs have observed the utility of PMI's long-standing EUV survey and requested GHSC-PSM support in adapting the survey to meet their needs. An updated EUV, while continuing to address PMI priorities, now includes optional modules that other task orders can fund to capture information on health commodities used in-family planning/reproductive health and maternal and child health programs. These task orders benefit from the work and investment previously made by PMI and harmonize the data-gathering approach for multiple task orders.

Most GHSC-PSM field offices are funded by multiple health areas and their corresponding task orders. This provides enormous benefits for field offices, which share the cost of office space, infrastructure and staff. Further, the various health areas fund or co-fund training, greatly expanding the training topics and number of people whose capacity is built. Similarly, health areas often share the cost of short-term technical assistance.

GHSC-PSM works to maximize synergies among the various health programs it supports. One way the project achieves these synergies is by developing approaches and/or systems in one health area that diffuse to other areas. For example, in Q2, GHSC-PSM completed warehousing and distribution analyses in Ghana to determine the best location for hubs in a central-level network and a last-mile delivery costing analysis. Results and recommendations will help achieve greater efficiency and cost savings for Ghana's supply chain, benefiting multiple health areas that deliver commodities through the supply chain.

In South Sudan, the project has been running a call center to collect stock status data for tracer commodities for task orders 1, 2 and 3 from health facilities since 2017. In Q3, the call center team conducted a data validation exercise to compare data collected during calls with physical stock and

information recorded in health facility stock cards. Through this exercise, the project compared results across three task orders. In general, the call center data matched the facilities' physical inventories. In facilities that were called more frequently, storekeepers kept stock cards updated in anticipation of the call so that they could readily provide data. These efforts are increasing the accuracy of the data collected through the call center and in inventory records at the facility level, as well as informing the launch of a similar call center in Niger.

C.5 Coordination with Other Parts of GHSC

A separate GHSC contract—the multi-award GHSC-TA contract—provides technical assistance through field offices in several countries, including in PMI countries Benin, Côte d'Ivoire, DRC, Senegal and Tanzania. USAID Missions in these countries procure health commodities through the GHSC-PSM contract. A GHSC-PSM team in headquarters serves as the point of contact for these non-field-office (NFO) countries on ordering, delivery and commodity security issues, conveying information and managing data requests.

The NFO team tailors its support based on commodity volume, commodity complexity, import requirements and in-country programming. To interact effectively and efficiently with the GHSC-TA contractors, the NFO team outlined roles and responsibilities, drafted communication protocols with in-country stakeholders and USAID Missions, and executed and monitored memorandums of understanding with the GHSC-TA contractors. The NFO team also coordinates closely with in-country technical assistance projects to manage contracts—for example, with the central medical store in Senegal. In Burkina Faso, GHSC-PSM coordinated with the GHSC-TA project to train nurses on SOPs for inputting information into the country's LMIS. By partnering on training, an additional 600 head nurses were trained.

At the end of September 2019, following the OOS incidents of LLINs produced by a key supplier, the project, through the malaria task order, began working with FHI360 to expand their scope of work to include additional testing of LLINs, as well as expand the period of performance of the indefinite quantity subcontract that has been providing quality control tests for malaria commodities as part of the GHSC-QA subcontract. The current scope of work features fixed prices for post-shipment testing of the procured and delivered LLINs manufactured by that supplier and for other vendors/suppliers as may be required. Executing this subcontract will continue to help PMI, the project and recipient countries gain better understanding of the quality of these LLINs to strategize a way forward.

D. Performance Monitoring

GHSC-PSM monitors and reviews project performance with the objective of continual improvement.

D.1 Indicators

GHSC-PSM has a USAID-approved M&E plan with performance indicators that reflect the project's results framework. Annex A provides the framework, and Annex B, the list of indicators and their definitions. Annex C summarizes malaria commodity procurement by country during FY 2019. Annex D details the sources of all the commodities the project procures. Annexes E–Q provide project performance as detailed by the indicators, and Annexes J–Q provides country-specific health supply chain systems strengthening indicators.

Our M&E plan includes quarterly, semiannual and annual indicators. The project collects and cleans performance monitoring data and calculates relevant indicator values each reporting period; these are reported in the project's contractual quarterly and annual reports. GHSC-PSM performs extensive quality assurance of on-time delivery data and works continually with project staff to ensure the quality of other indicator data. Headquarters-based M&E specialists carefully review indicator data provided by field offices that are used to calculate the country-level indicators.

As part of the quarterly reporting process, the M&E team convenes relevant GHSC-PSM teams, such as the Global Supply Chain team and the health area directors, to review quarterly findings. These meetings identify potential calculation issues and provide context for the quarterly report. They also support the relevant teams in reflecting on progress and prioritizing areas for improvement.

D.2 TO2 Regular Meetings and Review

GHSC-PSM has several internal standing meetings to review and discuss TO2 performance across the project and to identify areas for improvement. These meetings include:

- A weekly malaria task order management team meeting to discuss issues specific to malaria task order activities
- Daily Global Supply Chain meetings to review all pending orders and determine priority actions for appropriate malaria order management
- Weekly GHSC-PSM program management meetings to discuss crosscutting project issues that impact project health areas, including the malaria task order.

GHSC-PSM also has several standing meetings with the USAID/PMI team, including:

- Weekly GHSC-PSM malaria task order and PMI team meetings to review the status of pending malaria orders, provide updates on progress in systems strengthening activities and present and discuss new sourcing strategies and innovations for PMI approval before implementation.
- Biweekly GHSC-PSM malaria task order QA and PMI meetings to review and discuss progress and issues related to TO2 QA activities.

- Weekly GHSC-PSM management team and USAID check-in meetings to review crosscutting project performance with the USAID Contracting Officer's Representatives.
- Biweekly M&E TWG meetings to develop, review, update and promote global M&E strategies, processes, and tools for the project; identify and share best practices across countries and other USAID partners; and address issues related to technical assistance in evaluation that have cross-country applicability.
- Biweekly Logistics TWG meetings to review Deliver/Return and 3PL metrics and current logistical challenges and issues; participants also present and discuss customized logistics solutions that are developed to improve project performance.
- Monthly Country Program TWG meetings to enhance communication and collaboration between USAID and GHSC-PSM country programs, and address issues related to technical assistance across all health systems strengthening and task order areas that have cross-country applicability.
- Weekly Management Information System TWG meetings with the USAID technical backstops to discuss ARTMIS releases and other important technology challenges.
- Monthly FASP TWG meetings to develop, review, update and promote FASP technical strategies, processes and tools for the project; identify and share best practices across countries; address issues related to FASP technical assistance that have cross-country applicability; and contribute to Communities of Practice.
- Monthly Finance TWG meetings to coordinate and standardize financial management across all task orders; track funding streams and sources for procurement transactions and in-country activities; and update or adjust Monthly Financial Status reports for headquarters and country activities.

D.3 Other Monitoring

In 2017, GHSC-PSM, in collaboration with USAID, developed a "global" Environmental Mitigation and Monitoring Plan (EMMP) and an Initial Environmental Examination (IEE). At the time, the environmental framework component of these materials (aka, Environmental Protection, Information and Knowledge [EPIK] system) did not adequately address the correct conditions and the wide range of activities the project would implement. To support USAID GHSC's efforts to build core environmental mitigation and monitoring measures that address project needs, in FY19, Chemonics environmental staff joined the Bureau for Global Health Bureau Environmental Officer (GH BEO) in site visits to Malawi and South Africa. They engaged with stakeholders to better understand the conditions in which activities are implemented on the ground. GH BEO determined that operations in Malawi and South Africa are compliant with Regulation 216 and the project's EMMP.

In FY 2020, USAID will revise the IEE and EMMP to clarify requirements so that they appropriately align with project activities and scope. GHSC-PSM will focus on addressing country-level mitigation and monitoring measures to ensure the project is following USAID regulations and procedures. The GHSC-PSM project is compliant with USAID environmental regulations and policies; however, the project is required to build a stronger and more robust environmental management system (aka EPIK). EPIK will

be finalized and rolled out in FY 2020. Moving forward, this EPIK system will be the flagship platform for all GHSC projects and initiatives.

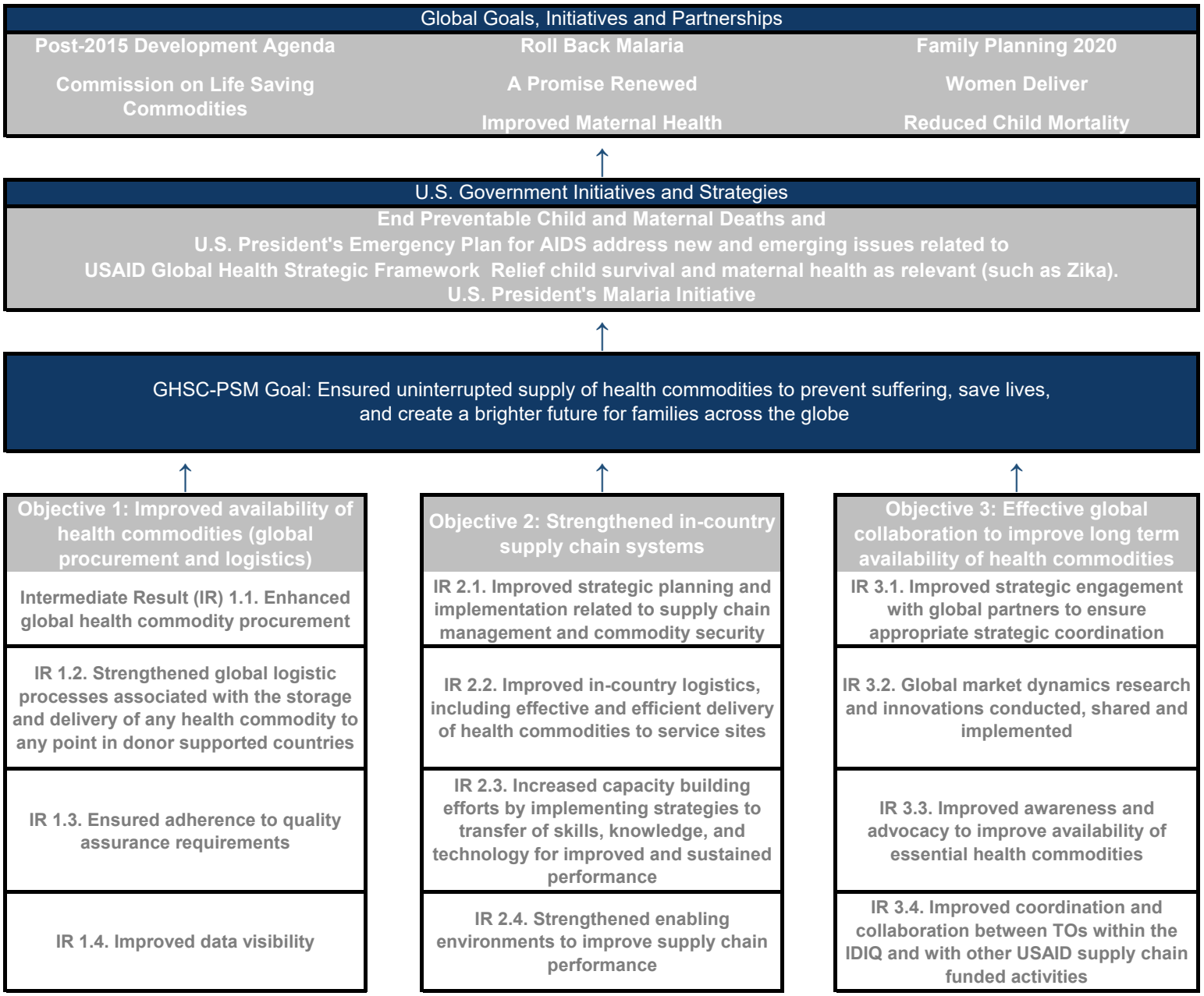
USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM

PROCUREMENT AND SUPPLY MANAGEMENT

GHSC-PSM TASK ORDER 2 (MALARIA)

ANNUAL REPORT ANNEX FISCAL YEAR 2019

ANNEX A. GHSC-PSM M&E RESULTS FRAMEWORK



ANNEX B. GHSC-PSM M&E PLAN (ABRIDGED)

GHSC PSM Performance Monitoring Plan					
Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 1	A1a	Percentage of line items delivered on time and in full, within the minimum delivery window	Number of line items delivered to the recipient on time and in full during the quarter / Total number of line items delivered to the recipient during the quarter	ARTMIS	Quarterly
OBJ. 1	A1b	Percentage of line items delivered on time, within the minimum delivery window	Number of line items with an agreed delivery date during the quarter that were delivered to the recipient on time / Total number of line items with an agreed delivery date during the quarter	ARTMIS	Quarterly
OBJ. 1	A2	Percentage of quality assurance (QA) processes completed within the total estimated QA lead times	Number of consignments complying with the pre-established QA lead times during the quarter / Total number of consignments requiring QA processes that were cleared for shipment during the quarter.	PSM QA database	Quarterly
OBJ. 1	A3	Cycle time (average)	Sum of cycle time for all line items delivered during the quarter / The count of all line items delivered during the quarter	ARTMIS & K+N LMIS	Quarterly
OBJ. 1	A4	Inventory turns (average number of time inventory cycles through (GHSC-PSM-controlled global facilities)	Total ex-works cost of goods distributed from GHSC-PSM-controlled global inventory stocks (in USD) within the fiscal year. / Average monthly inventory balance (in USD).	ARTMIS & K+N LMIS	Annual
OBJ. 1	A5a	Total Landed Cost (logistics costs only)	Sum of all logistics costs (in USD) paid by GHSC-PSM during the reporting period / Total value of commodities delivered to customers during the reporting period.	ARTMIS & K+N LMIS	Semi-Annual

Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 1	A5b	Total Landed Cost (All costs)	Sum of all commodity-related and HQ operations costs (in USD) paid by GHSC-PSM during the reporting period / Total value of commodities delivered to customers during the reporting period.	ARTMIS & K+N LMIS	Semi-Annual
OBJ. 1	A6a	Absolute percent supply plan error, with variants mean absolute percent error (MAPE) and supply plan bias	Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to country supply plans. / Sum of the actual quantities with requested delivery dates during the quarter	ARTMIS and country supply plans	Annual
OBJ. 1	A6b	Absolute percent forecast error, with variants mean absolute percent error (MAPE) and forecast bias	Absolute value of the differences between the actual quantities with requested delivery dates during the quarter minus the quantities planned for delivery according to the global demand forecast. / Sum of the actual quantities with requested delivery dates during the quarter.	ARTMIS and country supply plans	Annual
OBJ. 1	A7	Number of line items delivered during the quarter that required a temporary registration waiver for importation	Total number of line items delivered during the quarter	ARTMIS (for delivery data); Country Registration Status Forms; Registration Database	Quarterly
OBJ. 1	A8	Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (product at risk percentage)	Percentage of shelf life remaining at the end of the quarter, weighted by value of commodities, summed across all products / Total value of commodities, summed across all products, at the end of the quarter.	ARTMIS	Quarterly

Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 1	A10	Percentage of product procured using a framework contract (framework contract percentage)	Value of product purchased through framework contracts during the quarter / Total value of commodities purchased during the quarter.	ARTMIS	Quarterly
OBJ. 1	A13	Percentage of batches of product for which the final result is showing nonconformity (out-of-specification-percentage)	Total number of batches of product showing nonconformity during the quarter / Total number of batches tested during the quarter.	ARTMIS	Quarterly
OBJ. 1	A14	Average vendor rating score	Sum of all key vendor ratings / Number of key vendors from whom GHSC-PSM procured products/commodities, lab testing services, or freight forwarding during the quarter	ARTMIS, subcontracts, invoices, technical documents, email records.	Quarterly
OBJ. 1	A15	Percentage of quality assurance investigation reports submitted within 30 calendar days of outcome determination	Total number QA investigation reports submitted to PMI within 30 days of outcome determination / Total number of QA investigation reports due during the reporting period	QA investigation records and incident management records	Semi-Annual
OBJ. 1	A16	Percentage of backlogged line items	Number of line items with an agreed delivery date (ADD) on or before the reporting period end date within a rolling 12-month period, that have not been cancelled or put on hold and that are currently undelivered and late / Total number of line items with an ADD on or before the reporting period end date, within a rolling 12-month period, that have not been cancelled or put on hold.	ARTMIS	Quarterly

Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 2	B1	Stockout rates at SDPs	Number of SDPs that were stocked out of a specific tracer product according to the ending balance of the most recent logistics report (or on the day of site visit) / Total number of SDPs that reported/were visited in GHSC-PSM-supported countries that offer the tracer product.	In- Country LMIS or surveys such as EUV when LMIS data is not available	Quarterly
OBJ. 2	B2	Percentage of stock status observations in storage sites where commodities are stocked according to plan, by level in supply system (tracer products)	Number of stock status observations for a tracer commodity that were within the designated minimum and maximum quantities at storage sites / Total number of stock status observations for a tracer commodity at storage sites.	In- Country LMIS, program monitoring reports, stock status reports/stock keeping records/regular physical counts, order forms from the central/regional/district/facility levels, or regular supervision visits.	Quarterly
OBJ. 2	B3	Service delivery point (SDP) reporting rate to the logistics management information system (LMIS)	Number of SDPs whose LMIS report(s) or order form(s) were received at the central level within 30 days of the specified in-country deadline / The total number of SDPs in country that are required to report.	In- Country LMIS	Quarterly
OBJ. 2	B4	Average rating of in-country data confidence at the central, subnational, and SDP levels	Sum of all rating scores (0-9 points each) for all sites reporting, as described under Plan for Data Acquisition. / Total number of sites reporting.	Warehouse mgmt. reports, warehouse receipts and issues documents, LMIS reports, stock cards, ROs, WMS reports, physical counts, etc.	Annual
OBJ. 2	B5	% of required annual forecasts conducted	Number of required annual forecasts conducted. / Total number of required annual forecasts.	Project records	Annual
OBJ. 2	B6	Percentage of required supply plans submitted to GHSC-PSM during the quarter	Number of required supply plans that were submitted to GHSC-PSM in the quarter / Total number of required supply plans.	Project Records	Quarterly

Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 2	B7	Percentage of total spent or budgeted on procurement of commodities for public sector services by the local government, U.S. government, the Global Fund, or other sources	Total budgeted/spent on health care commodities by a specific stakeholder in a country. / Total budgeted/spent on health care commodities in a specific country.	Annual budgeting exercises, quantifications, supply plans, host country records from government and donors, customs clearance records.	Annual
OBJ. 2	B8	Percentage of targeted supply chain activities in which the host country entity has achieved technical independence with GHSC technical assistance	Total number of targeted supply chain activities in which the host country entity has achieved technical independence with GHSC technical assistance / Total number of supply chain activities targeted to achieve technical independence with GHSC technical assistance	Project records, MOH documents, interviews with stakeholders	Annual
OBJ. 2	B9	Supply Chain Technical Staff Turnover Rate	Number of supply chain technical staff who left the active health labor force in the last year. / Total number of supply chain technical staff at the beginning of last year.	HRIS data, employment records and payroll records obtained from the country's HR department and staff	Annual
OBJ. 2	B10	Percentage of GHSC-PSM-supported countries that have a functional logistics coordination mechanism in place	Total number of countries with a functional logistics coordination mechanism in place as determined by a qualitative assessment. / Total number of countries supported by GHSC-PSM for technical assistance.	Committee meeting agendas and/or minutes; interviews with committee members	Annual
OBJ. 2	B11	Percentage of leadership positions in supply chain management that are held by women (in countries where GHSC-PSM is providing technical assistance related to workforce development)*	Number of leadership positions in supply chain management that were held by women in a specified time in countries where GHSC-PSM is providing technical assistance related to workforce development. / Total number of leadership positions held in a specified time, in countries where GHSC-PSM is providing technical assistance related to workforce development.	Workforce surveys	Annual

Objective	Indicator Number	Indicator Name	Numerator / Denominator	Source	Reporting Frequency
OBJ. 2	B12	Mean absolute percent consumption forecast error, with forecast bias variant	Absolute value of the difference between the actual quantities of products consumed at service delivery points during the year minus the forecasted consumption for the year. / Sum of the actual quantities of products consumed during the year.	Routine LMIS or consumption reports; annual consumption forecasts for each tracer product.	Annual
OBJ. 3	C1	Number of innovations (including operations research studies) that were developed, implemented, or introduced and are related to health commodity market or supply chain best practices	Number of innovations: An innovation refers to new technologies, new products, new approaches, and/or operational research studies developed, implemented, or introduced during the period of reporting.	Project Records	Quarterly
OBJ. 2	C2	Number of people trained	“People trained” refers to any type of participant, student, or learner in a training event, regardless of its duration. People trained may refer to different categories of participants (e.g., physicians, nurses, social workers).	Project Records	Quarterly

Annex C. Summary - Malaria Commodity Procurement by Country

FY19 PMI procurement totals, by country (in treatments)

Country	ACTs (blister strips)	Laboratory	ITNs (nets)	RDTs (tests)	Other Pharma	Severe Malaria Meds	SMC (blister strips)	SP
Angola	945,025	4,853,000	211,228	2,500,000		823,468		271,333
Benin	1,999,980		3,542,273	4,120,000		110,000	589,400	583,500
Burkina Faso	6,450,060		350,000	8,573,000			2,405,000	
Burma	46,950		300,000	540,000				
Burundi				2,000,000				
Cambodia				85,000	5,000			
Cameroon	90,060			1,352,250		485,900	5,833,000	
Congo DRC	4,001,110	3,568,205	1,306,000	8,100,100		1,064,596		4,000,000
Côte d'Ivoire	786,000		139,422	1,869,000		60,000		1,099,000
Ethiopia		4,992,722	5,573,113		16,477,200	423,764		
Ghana	1,502,435	8,000,000		4,000,000		237,033	1,189,100	
Guinea	2,088,300	656,049	250,000	1,740,875	612,000	897,740	1,691,500	
Kenya	1,388,250		490,575	3,050,000		763,100		
Laos			174,588	100,000				
Liberia	553,675			2,400,000	1,000,000	26,535		675,000
Madagascar	1,092,050		1,000,000	1,000,000		60,000		1,806,900
Malawi	1,883,820	4,037,122	1,400,000	4,000,000		27,916		2,400,000
Mali	1,429,140	1	1,575,000	1,000,000			3,000,000	1,000,017
Mozambique	6,725,010		1,597,000	7,500,000		229,458		3,553,650
Niger	770,010			3,082,525		374,864	5,315,100	1,600,000
Nigeria	16,353,630	121,460	3,100,000	15,454,775		97,044		7,763,950
Rwanda	915,630		2,700,000			142,104		
Senegal	996,410		2,013,200	600,000		532,100		1,325,550
Sierra Leone	1,452,420		2,500,000	850,000		306,000		
Tanzania	3,184,020		3,399,175			1,286,276		
Thailand			80,000					
Uganda	1,042,770		385,000	1,853,000		43,000		
Zambia	3,500,040	15,965		8,565,200				
Zimbabwe	811,030		712,569	1,000,000		69,133		535,700
Grand Total	**60,007,825**	**26,244,524**	**33,289,723**	**85,335,725**	**18,094,200**	**8,060,031**	**20,023,100**	**#########**

Annex D. Commodity Sources

Pre-selected RDT Manufacturers

Manufacturer	Test Name	Target Antigen	Species
Access Bio, Inc.	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 test (Bulk + POCT)	HRP2	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf) Cassette, 25 Tests (Bulk packaging)	HRP2/pLDH	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/PAN) Cassette, 25 Tests (Bulk packaging)	HRP2/pLDH	Pf/PAN
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/Pv) Cassette, 25 Tests (Bulk packaging)	HRP2/pLDH	Pf/PV
	Malaria Rapid Diagnostic Test (RDT) pLDH (PAN) Cassette, 25 Tests (Bulk packaging)	pLDH	PAN
Artron Laboratories Inc.	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 test (Bulk packaging)	HRP2	Pf
Hangzhou Biotest Biotech Co., Ltd	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 test (Bulk packaging)	HRP2	Pf
Premier Medical Corporation Ltd	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 tests (Bulk + POCT)	HRP2	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/PAN) Cassette, 25 Tests (Bulk + POCT)	HRP2/pLDH	Pf/PAN
Tulip Diagnostics [P] Ltd	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 tests (Bulk packaging)	HRP2	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/Pv) Cassette, 25 Tests (Bulk packaging)	HRP2/pLDH	Pf/Pv
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/PAN) Cassette, 25 Tests (Bulk packaging)	HRP2/pLDH	Pf/PAN
Standard Diagnostics, Inc.	Malaria Rapid Diagnostic test (RDT) HRP2 (Pf) Cassette, 25 tests (Bulk + POCT)	HRP2	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf) Cassette, 25 Tests (Bulk + POCT)	HRP2/pLDH	Pf
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/PAN) Cassette, 25 Tests or 30 Tests (Bulk + POCT)	HRP2/pLDH	Pf/PAN
	Malaria Rapid Diagnostic Test (RDT) HRP2/pLDH (Pf/Pv) Cassette, 25 Tests (Bulk + POCT)	HRP2/pLDH	Pf/Pv

Pre-Selected LLIN Manufacturers

Manufacturer	Brand	Material	Denier	Pesticide	Whopes Status
A to Z Textile Mills Ltd.	Olyset®	Polyethylene	150	Permethrin	Full
BASF	Interceptor®	Polyester	100	Alpha-cypermethrin	Full
Disease Control Technologies	Royal Sentry®	Polyethylene	150	Alpha-cypermethrin	Full
Fujian Yamei Industry & Trade Co.	Yahe®	Polyester	100	Deltamethrin	Interim
Shobikaa Impex Private Ltd.	Duranet®	Polyethylene	150	Alpha-cypermethrin	Full

Manufacturer	Brand	Material	Denier	Pesticide	Whopes Status
Sumitomo Chemical Co. Ltd.	Olyset®	Polyethylene	150	Permethrin	Full
Vestergaard SA	PermaNet 2.0®	Polyester	100	Deltamethrin	Full

WHO Pre-Qualified ACT Manufacturers

Manufacturer	Product	Details
Ajanta	ALU	20 mg artemether/120 mg lumefantrine 6x1 DT, 6x2 DT, 6x1, 6x2, 6x3, 6x4
	ASAQ	25 mg artesunate/67.5 mg amodiaquine 1x3
		50 mg artesunate/135 mg amodiaqune 1x3
		100 mg artesunate/270 mg amodiaqune 1x3, 1x6
Cipla	ALU	20 mg artemether/120 mg lumefantrine 6x1, 6x2, 6x3, 6x4
	ASAQ	25 mg artesunate/67.5 mg amodiaquine 1x3
		50 mg artesunate/135 mg amodiaqune 1x3
		100 mg artesunate/270 mg amodiaqune 1x3, 1x6
Novartis	ALU	20 mg artemether/120 mg lumefantrine 6x1 DT, 6x2 DT, 6x1, 6x2, 6x3, 6x4
		80 mg artemether/480 mg lumefantrine 6x1
Macleods	ALU	20 mg artemether/120 mg lumefantrine 6x1, 6x2, 6x3, 6x4
Ipca	ALU	20 mg artemether/120 mg lumefantrine 6x1, 6x2, 6x3, 6x4
	ASAQ	25 mg artesunate/67.5 mg amodiaquine 1x3
		50 mg artesunate/135 mg amodiaqune 1x3
		100 mg artesunate/270 mg amodiaqune 1x3, 1x6
Guilin	ASAQ	25 mg artesunate/67.5 mg amodiaquine 1x3
		50 mg artesunate/135 mg amodiaqune 1x3
		100 mg artesunate/270 mg amodiaqune 1x3, 1x6
Sanofi	ASAQ	25 mg artesunate/67.5 mg amodiaquine 1x3
		50 mg artesunate/135 mg amodiaqune 1x3
		100 mg artesunate/270 mg amodiaqune 1x3, 1x6

WHO Pre-Qualified Other-Pharmaceutical Manufacturers

Manufacturer	Product	Details
Guilin	SPAQ	Amodiaquine 76.5 mg + Sulfadoxine/Pyrimethamine 250/125 mg Dispersible Tablets, 50 x 1 SP + 3 AQ Co-Blister Tablets
		Amodiaquine 153 mg + Sulfadoxine/Pyrimethamine 500/25 mg Dispersible Tablets, 50 x 1 SP + 3 AQ Co-Blister Tablets

Manufacturer	Product	Details
Guilin	Artesunate Injectable	Artesunate (w/ 1 Amp NaHCO3 5% + 1 Amp NaCl 09%) 60 mg Vial, 1 Set
		Artesunate (w/ 1 Amp NaHCO3 5% + 1 Amp NaCl 09% + 2 x 10 mL Syringe) 60 mg Vial, 1 Set
		Artesunate (w/ 1 Amp NaHCO3 5% + 1 Amp NaCl 09%) 30 mg Vial, 1 Set

Annex E. GHSC-PSM Procurement Indicators

A10. Percentage of product procured using a framework contract (framework contract percentage)								
	FY19Q1		FY19Q2		FY19Q3		FY19Q4	
	Total value of all product procured	Framework contract percentage	Total value of all product procured	Framework contract percentage	Total value of all product procured	Framework contract percentage	Total value of all product procured	Framework contract percentage
Task Order 2	$48,052,153.00	60%	$21,178,130.00	68%	$45,276,343.00	74%	$22,511,210	57%
ACTs	$11,533,056.00	98%	$7,229,582.00	100%	$3,609,049.00	81%	$3,796,569	100%
LLINs	$17,978,765.00	0%	$6,470,372.00	0%	$35,835,060.00	100%	$9,625,268	0%
Laboratory	$7,050.00	0%	$24,158.00	0%	$612,773.00	0%	$3,903	0%
Other non-pharma	$192,000.00	0%	$177,090.00	0%	$184,773.00	0%		
Other pharma	$1,113,439.00	100%	$161,637.00	100%	$166,574.00	40%	$51,950	100%
Severe malaria meds	$5,808,062.00	100%	$2,922,662.00	100%	$314,471.00	56%	$2,509,893	100%
mRDTs	$10,279,129.00	92%	$2,523,760.00	100%	$3,667,478.00	100%	$956,784	100%
Seasonal Malaria Chemoprevention							$4,040,760	100%
Sulphadoxine-pyrimethamine	$1,140,653.00	100%	$1,668,867.00	100%	$886,166.00	0%	$1,526,083	100%

Annex F. OTIF and OTD for Task Order 2

A1a. Percentage of line items delivered on time and in full, within the minimum delivery window (OTIF)												
	FY19Q1			FY19Q2			FY19Q3			FY19Q4		
Product Category	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)	Total number of line items delivered	Number of line items delivered on time and in full	On time in full (%)
Task Order 2	188	167	89%	202	186	92%	270	238	88%	205	187	91%
ACTs	60	56	93%	126	118	94%	118	114	97%	53	49	92%
Laboratory	4	4	100%	1	1	100%	4	2	50%	55	54	98%
LLINs	54	49	91%	23	21	91%	25	25	100%	20	19	95%
mRDTs	16	7	44%	20	18	90%	52	34	65%	23	17	74%
Other Non-Pharma	4	4	100%				5	2	40%	16	15	94%
Other Pharma	3	3	100%	2	2	100%	4	4	100%	2	2	100%
Severe Malaria Meds	45	43	96%	21	17	81%	19	15	79%	25	20	80%
Seasonal Malaria Chemoprevention				2	2	100%	19	18	95%	1	1	100%
Sulphadoxine-pyrimethamine	2	2	100%	7	6	86%	19	18	96%	10	10	100%

A1b. Percentage of line items delivered on time, within the minimum delivery window (OTD)												
	FY19Q1			FY19Q2			FY19Q3			FY19Q4		
Product Category	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On time delivery (%)	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On time delivery (%)	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On time delivery (%)	Total number of line items with ADDs in the quarter	Number of line items with ADDs in the quarter delivered on time	On time delivery (%)
Task Order 2	189	178	94%	203	189	93%	264	256	97%	207	201	97%
ACTs	61	61	100%	124	118	95%	118	118	100%	53	53	100%
Laboratory	4	4	100%	3	1	33%	2	2	100%	59	58	98%
LLINs	56	49	88%	21	21	100%	25	25	100%	22	19	86%
mRDTs	11	9	82%	21	21	100%	51	44	86%	24	23	96%
Other Non-Pharma	4	4	100%	2	2	100%	3	2	67%	16	16	100%
Other Pharma	4	4	100%	2	2	100%	4	4	100%	2	2	100%
Severe Malaria Meds	47	44	94%	22	18	82%	18	17	94%	19	19	100%
Seasonal Malaria Chemoprevention				2	2	100%	19	19	100%	1	1	100%
Sulphadoxine-pyrimethamine	2	2	100%	6	6	100%	24	24	100%	11	10	91%

Annex H. Other GHSC-PSM Logistics Indicators

Other Global Supply Chain Logistics Indicators for TO2					
Indicator	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Target
A3. Cycle time (average)	328	341	324	322	315
A4. Inventory Turns	3.9				3
A5. Total landed cost (logistics costs only)	33.3%		34.7%		18%
A5. Total landed cost (logistics and headquarters operations costs)	36.6%		38.7%		
A6a. Supply plan error - Single quarter - ACTs		(-)31%	38.0%	(-)28%	
A6a. Supply plan error - Rolling four quarters - ACTs			7%	2%	35%
A6a. Supply plan error - Single quarter - mRDTs		(-)20%	(-)33%	(-)80%	
A6a. Supply plan error - Rolling four quarters - mRDTs			(-)27%	(-)37%	27%
A8. Average percentage of shelf life remaining for warehoused commodities, weighted by the value of each commodity's stock (product at risk percentage)	68%	66%	69%	79%	70%
A16. Percentage of backlogged line items	0.6%	0.3%	1.1%	0.5%	5%

Annex I. Commodity Importation Waivers

A7. Percentage of Delivered Line Items that required Temporary Waiver Registration							
Tracer Item Category	FY19 Q1	FY19 Q2		FY19 Q3		FY19 Q4	
		%	Total Line Items	%	Total Line Items	%	Total Line Items
TO2 Overall	--	5.0%	202	10.0%	270	9.8%	205
ACTs		1.6%	126	7.6%	118	11.3%	53
Laboratory	--	0.0%	1	0%	4	0%	55
LLINs	--	0.0%	23	0%	25	0%	20
mRDTs	--	0.0%	20	0%	52	0%	23
Other Non-Pharma	--			0.0%	5	0%	16
Other Pharma	--	100.0%	2	50.0%	4	100%	2
Severe Malaria Meds	--	19.0%	21	57.9%	19	16%	25
Seasonal Malaria Chemoprevention	--	0.0%	2	10.5%	19	100%	1
Sulphadoxine-pyrimethamine	--	28.6%	7	12.5%	24	70%	10

Annex J. Global Supply Chain Indicators: Quality Assurance

A2. Percentage of quality assurance (QA) processes completed within the total estimated QA lead times				
	FY19Q1	FY19Q2	FY19Q3	FY19Q4
ACTs	77%	88%	81%	100%
RDTs	91%	82%	100%	100%
SP	33%	67%	0%	100%
LLINs	100%	100%	100%	100%
Severe malaria medications	100%	54%	56%	100%
Other pharma	50%	0%	40%	100%
TO2 Overall	**84%**	**80%**	**74%**	**100%**
Overall Target	**80%**	**80%**	**80%**	**80%**

A13: Percentage of batches of product for which the final result is showing nonconformity (out-of-specification-percentage)				
	FY19Q1	FY19Q2	FY19Q3	FY19Q4
ACTs	0%	0%	0%	0%
RDTs	0%	0%	0%	0%
SP	0%	0%	0%	0%
LLINs	0%	0%	0%	0%
Severe malaria medications	0%	0%	0%	0%
Other pharma	0%	0%	0%	0%
TO2 Overall	**0%**	**0%**	**0%**	**0%**
Note: Overall TO2 Target is <1%				

A15. Percentage of quality assurance investigation reports submitted within 30 calendar days of outcome determination			
	FY19: Q1 &Q2	FY19: Q3 &Q4	FY19 Target
ACTs	100%	50%	90%
RDTs			90%
SP			90%
LLINs			90%
Severe malaria medications			90%
Other pharma			90%
TO2 Overall	**100%**	**50%**	**90%**

Annex K. People Trained by Quarter - TO2 Only

Indicator C2: People trained by GHSC-PSM, by country, by gender

		FY19Q1	FY19Q2	FY19Q3	FY19Q4	FY19 Total
Angola	Female			42	30	72
	Male			76	99	175
	Total			**118**	**129**	**247**
Burkina Faso	Female	75	39	16		130
	Male	297	120	39		456
	Total	**372**	**159**	**55**		**586**
Burma	Female		2			2
	Male		3			3
	Total		**5**			**5**
Burundi	Female		8		33	41
	Male		7		18	25
	Total		**15**		**51**	**66**
Cambodia	Female	3	10	148	42	203
	Male	8	29	157	81	275
	Total	**11**	**39**	**305**	**123**	**478**
Cameroon	Female		21	12	15	48
	Male		33	65	22	120
	Total		**54**	**77**	**37**	**168**
Ethiopia	Female	3	12		13	28
	Male	22	51	8	32	113
	Total	**25**	**63**	**8**	**45**	**141**
Ghana	Female		5	54		59
	Male		7	93		100
	Total		**12**	**147**		**159**
Guinea	Female			56	8	64
	Male			80	36	116
	Total			**136**	**44**	**180**
Liberia	Female	2		6		8
	Male	9		10	2	21
	Total	**11**		**16**	**2**	**29**
Malawi	Female	1		3	6	10
	Male	1		3	5	9
	Total	**2**		**6**	**11**	**19**
Mali	Female		2		2	4
	Male		5		10	15
	Total		**7**		**12**	**19**
Mozambique	Female	54	9	58	26	147
	Male	29	9	30	35	103
	Total	**83**	**18**	**88**	**61**	**250**
Niger	Female				3	3
	Male			12	10	22
	Total			**12**	**13**	**25**
Nigeria	Female	23		4	585	612
	Male	43		4	788	835
	Total	**66**		**8**	**1,373**	**1,447**
Rwanda	Female	1	2	56	40	99
	Male	4		48	82	134
	Total	**5**	**2**	**104**	**122**	**233**
Zambia	Female		9	11	15	35
	Male		9	14	16	39
	Total		**18**	**25**	**31**	**74**
Zimbabwe	Female				9	9
	Male				12	12
	Total				**21**	**21**
Sub-Total Female		162	119	466	827	1,574
Sub-Total Male		413	273	639	1,248	2,573
Grand Total		**575**	**392**	**1,105**	**2,075**	**4,147**

Annex L. People Trained- Funding Source

FY19 People Trained with Funding from TO2; from TOs 1,3,4; or with cross-cutting support

Country	Task Order	Forecasting and Supply Planning	Governance and Financing	Human Resources Capacity Development	MIS	Monitoring and Evaluation	Quality Assurance	Strategy and Planning	Transportation and Distribution	Warehousing and Inventory Management	Sub-total	Country Sub Total
Angola	TO 1,3,4	13			7				4	161	185	**432**
	TO2 Specific					151				47	198	
	Cross TO (TO2 share)				49						49	
Burkina Faso	TO 1,3,4											**586**
	TO2 Specific			27	396	16			147		586	
	Cross TO (TO2 share)											
Burma	TO 1,3,4	39			19		4				62	**67**
	TO2 Specific											
	Cross TO (TO2 share)				5						5	
Burundi	TO 1,3,4	29			104						133	**199**
	TO2 Specific											
	Cross TO (TO2 share)				66						66	
Cambodia	TO 1,3,4	2			115						117	**595**
	TO2 Specific	144		4				96	211	11	466	
	Cross TO (TO2 share)	12									12	
Cameroon	TO 1,3,4				84					52	136	**304**
	TO2 Specific				60					17	77	
	Cross TO (TO2 share)				85					6	91	
Ethiopia	TO 1,3,4	8	70	23		24		447		28	600	**741**
	TO2 Specific									26	26	
	Cross TO (TO2 share)	5	29			18		53		10	115	
Ghana	TO 1,3,4	13			24					284	321	**480**
	TO2 Specific											
	Cross TO (TO2 share)				12					147	159	
Guinea	TO 1,3,4	13		7	68	61				5	154	**334**
	TO2 Specific	46				46					92	
	Cross TO (TO2 share)	9		4	38	34				3	88	
Liberia	TO 1,3,4	50		23	245					1	319	**348**
	TO2 Specific											
	Cross TO (TO2 share)	17			10					2	29	
Malawi	TO 1,3,4	27		90	54						171	**190**
	TO2 Specific											
	Cross TO (TO2 share)	2			17						19	
Mali	TO 1,3,4				27						27	**46**
	TO2 Specific											
	Cross TO (TO2 share)				19						19	
Mozambique	TO 1,3,4			207	94	54	37		29	654	1075	**1325**
	TO2 Specific								43	35	78	
	Cross TO (TO2 share)				18	12	7		6	129	172	
Niger	TO 1,3,4											**25**
	TO2 Specific	7			8	10					25	
	Cross TO (TO2 share)											
Nigeria	TO 1,3,4				4483	7				976	5466	**6913**
	TO2 Specific			66							66	
	Cross TO (TO2 share)				1373	8					1381	
Rwanda	TO 1,3,4	35			28			1230		275	1568	**1801**
	TO2 Specific			122							122	
	Cross TO (TO2 share)	3			2			106			111	
Zambia	TO 1,3,4			1006							1006	**1080**
	TO2 Specific											
	Cross TO (TO2 share)			74							74	
Zimbabwe	TO 1,3,4						69		112	30	211	**232**
	TO2 Specific											
	Cross TO (TO2 share)								21		21	
Sub-Total	TO 1,3,4	229	70	1356	5352	146	110	1677	145	2466	11551	
	TO2 Specific	197		219	464	223		96	401	136	1736	
	Cross TO (TO2 share)	48	29	78	1694	72	7	159	27	297	2411	
Grand Total for Technical Area		**467**	**99**	**1653**	**7502**	**431**	**117**	**1932**	**573**	**2899**		

Annex M. Stockout Rates at Service Delivery Points

Indicator B1: Stockout rates of Malaria Commodities at Service Delivery Points for FY18

Country	Project Quarters	Overall Stock out rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AL inability to treat)	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Angola	FY19Q1	**13%**	17%	12	8%	12	8%	12	8%	12	0%	12									17%	12	100%	1		
	FY19Q2	**48%**	33%	12	33%	12	33%	12	33%	12	0%	12	53%	450	53%	450	54%	450	39%	450	31%	462	62%	452		
	FY19Q3	**51%**	25%	12	33%	12	17%	12	25%	12	62%	607	53%	595	57%	595	60%	595	55%	595	25%	607	16%	110		
	FY19Q4	**27%**	50%	10	60%	10	40%	10	30%	10	57%	713	25%	703	17%	703	27%	703	22%	703	10%	713	36%	225		
	Trend																									
Burkina Faso	FY19Q1	**19%**	24%	1688	12%	1688	24%	1688	18%	1688	4%	1688	36%	1688	39%	1688					6%	1688	7%	1688	5%	1688
	FY19Q2	**10%**	23%	1766	6%	1766	19%	1766	10%	1766	1%	1766									1%	1766	5%	1766	7%	1766
	FY19Q3	**7%**	21%	1337	46%	1337	10%	1337	7%	1337	1%	1337									1%	1337	5%	1337	8%	1337
	FY19Q4	**17%**	21%	80	38%	80	25%	80	15%	80	3%	80									6%	80	11%	80	15%	80
	Trend																									
Burundi (non- project supported sites)	FY19Q1	**0.9%**											0%	729	3%	736	0.2%	665	0%	665	1%	714	1%	712	1%	757
	FY19Q2	**1.5%**											2%	829	4%	824	0.7%	752	1%	786	1%	864	1%	752	1%	792
	FY19Q3	**1.1%**											2%	686	1%	739	0.4%	667	2%	708	1%	736	1%	643	1%	691
	FY19Q4	**0.7%**											1%	799	1%	821	0.4%	737	1%	782	1%	815	0%	698	1%	755
	Trend																									
Cameroon	FY19Q1																									
	FY19Q2																									
	FY19Q3	**49%**	50%	24	13%	24	4%	24	17%	24			80%	81	85%	81	64%	81	69%	81	30%	105	14%	105		
	FY19Q4	**47%**	27%	11	36%	11	64%	11	18%	11			81%	80	78%	80	68%	80	71%	80	4%	91	1%	91		
	Trend																									
Ethiopia	FY19Q1	**10%**	17%	415	11%	453	12%	323	6%	733	3.9%	804									9%	355				
	FY19Q2	**12%**	18%	360	10%	486	13%	352	8%	742	4.5%	822									16%	366				
	FY19Q3	**11%**	19%	331	18%	453	18%	297	7%	728	5.0%	820									7%	339				
	FY19Q4	**12%**	16%	403	20%	350	21%	336	15%	682	1.0%	785									11%	324				
	Trend																									

Country	Project Quarters	Overall Stock out rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AL inability to treat)	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Ghana	FY19Q1																									
	FY19Q2	**41%**	44%	61	60%	53	84%	19	27%	94	6%	94	79%	52	70%	43	46%	67	51%	53	16%	84	12%	84	35%	94
	FY19Q3																									
	FY19Q4	**54%**	73%	101	63%	101	96%	101	18%	101	12%	101	97%	101	90%	101	81%	101	77%	101	13%	101	17%	100	9%	101
	Trend																									
Guinea	FY19Q1	**5%**	6%	432	5%	433	5%	433	9%	427	0.2%	433									3%	432	4%	424		
	FY19Q2	**10%**	9%	492	7%	492	8%	492	14%	491	0.6%	492									1%	492	13%	492	19%	491
	FY19Q3	**5%**	5%	500	5%	503	5%	501	10%	499	1.0%	495									2%	499	10%	502	3%	502
	FY19Q4	**6%**	7%	487	22%	461	6%	488	5%	488	1.6%	489									3%	489	1%	460		
	Trend																									
Liberia	FY19Q1																									
	FY19Q2																									
	FY19Q3	**30%**	29%	86	28%	86	43%	86	28%	86	7%	86	40%	86	34%	86	49%	86	34%	86	17%	86	16%	86	37%	86
	FY19Q4																									
	Trend																									
Malawi	FY19Q1	**8%**	12%	654	6%	660	3%	657	4%	663	0%	655									3%	663	7%	645	22%	547
	FY19Q2	**6%**	1%	618	8%	616	7%	616	5%	622	0%	613									2%	619	6%	607	12%	527
	FY19Q3	**5%**	4%	617	12%	615	8%	614	5%	620	1%	612									1%	616	5%	597	7%	534
	FY19Q4	**6%**	2%	623	5%	616	3%	618	2%	626	0%	626									1%	625			5%	555
	Trend																									
Mali	FY19Q1	**10%**	7%	921	12%	892	23%	719	10%	896	1%	968									5%	935	4%	923	11%	872
	FY19Q2	**14%**	8%	1038	13%	1018	23%	912	27%	943	1%	1063									7%	1041	8%	1021	16%	995
	FY19Q3	**5%**	6%	1058	7%	1028	15%	882	28%	760	1%	1097									5%	597	8%	524	7%	242
	FY19Q4	**3%**	5%	1034	2%	986	4%	872	5%	807	0%	1149									2%	802	2%	663	11%	309
	Trend																									

Country	Project Quarters	Overall Stock out rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AL inability to treat)	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Mozambique	FY19Q1	**27%**	31%	601	26%	589	35%	572	33%	594	0%	601									16%	648	24%	509	23%	207
	FY19Q2	**28%**	32%	534	29%	534	36%	516	34%	542	10%	579									11%	440	24%	404	25%	185
	FY19Q3	**12%**	15%	651	23%	633	14%	636	14%	640	2%	669									5%	597	11%	524	19%	242
	FY19Q4	**12%**	15%	811	18%	817	11%	805	14%	825	1%	875									5%	802	12%	663	39%	309
	Trend																									
Niger	FY19Q1																									
	FY19Q2																									
	FY19Q3	**14%**	9%	58	10%	58	24%	58	16%	58	3%	58									10%	58	10%	58	33%	58
	FY19Q4																									
	Trend																									
Nigeria	FY19Q1	**11%**	8%	3223	12%	3351	18%	3105	11%	3401	4%	3467	5%	1560	7%	1623	5%	2079	6%	1571	12%	3359	9%	3075	34%	1148
	FY19Q2	**7%**	5%	3442	6%	3411	9%	3414	6%	3436	1%	3460	8%	2164	8%	2134	6%	2435	7%	2220	7%	3405	7%	3106	6%	2584
	FY19Q3	**8%**	4%	3496	4%	3492	6%	3480	4%	3497	1%	3509	2%	2460	3%	2363	2%	2572	2%	2469	6%	3488	29%	2662	43%	2282
	FY19Q4	**5%**	4%	3494	5%	3492	9%	3479	4%	3501	1%	3515	2%	2537	2%	2337	1%	2529	2%	2467	9%	3482	6%	3062	17%	2491
	Trend																									
Rwanda	FY19Q1	**0.6%**	1%	512	0.8%	511	0.7%	457	0.7%	537	0%	504									0%	459				
	FY19Q2	**1.2%**	1.4%	506	1.1%	551	1.3%	550	0.9%	562	0.0%	531									1.4%	500				
	FY19Q3	**0.7%**	1%	546	1.3%	544	0.5%	547	0.7%	560	0%	565									1%	515				
	FY19Q4	**1.1%**	1.6%	485	1.8%	562	1.2%	500	0.6%	520	0.0%	541									1.5%	531				
	Trend																									
Uganda	FY19Q1	**12%**									7%	239									10%	236	13%	200		
	FY19Q2	**5%**									2%	510									4%	499	6%	406		
	FY19Q3	**5%**									4%	468									4%	461	7%	407		
	FY19Q4	**5%**									3%	469									4%	464	9%	405		
	Trend																									
Zambia	FY19Q1	**15%**	10%	1695	153%	1654	12%	1664	15%	1668	9%	1748									5%	1516	36%	1365		
	FY19Q2	**21%**	26%	1731	16%	1727	13%	1739	19%	1726	2%	1837									9%	1679	43%	1540		
	FY19Q3	**25%**	28%	1765	31%	1749	23%	1786	24%	1794	4%	1893									14%	1816	56%	1549		
	FY19Q4	**21%**	20%	1783	21%	1743	13%	1800	24%	1778	2%	1905									10%	1783	63%	1502		
	Trend																									
Zimbabwe	FY19Q1	**10%**	7%	1640	17%	1622	13%	1641	6%	1671	0.8%	1677									2.6%	1661	24%	741		
	FY19Q2	**10%**	10%	1603	18%	1597	10%	1600	6%	1639	1.8%	1644									3%	1634	11%	717		
	FY19Q3	**17%**	33%	718	19%	718	18%	718	12%	718	4.0%	718									10%	540	23%	503		
	FY19Q4	**10%**	21%	1220	12%	1219	11%	1223	9%	1227	1.0%	1227									7%	1235	9%	562		
	Trend																									

GHSC-PSM does not have data points for gray cells. Possible reasons are: 1) Commodities are not tracer commodities for that country or data are not available from the country's LMIS; 2)Periods of time for which data for those commodities were not available or reporting systems were not ready to provide that information; 3)Activities had not started yet in those countries.

Annex N. Stocked According to Plan Rates at Storage Sites

Indicator B2: Stocked according to plan (SATP) rates of malaria commodities at central and first subnational level storage sites for FY18

Country	Project Quarters	Overall TO2 SATP rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AS/AQ 100/270mgx3)	Denominator	First-line ACTs (AS/AQ 100/270mgx6)	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Angola	FY19Q1	**5.4%**	0%	57	0%	57	0%	57	0%	57	7.0%	57	11.0%	57	4%	57	4%	57	26%	57	4%	57		
	FY19Q2	**4.6%**	0%	57	1.8%	57	0%	57	4%	57	2%	57	14%	57	0%	57	2%	57	18%	57	5%	57		
	FY19Q3	**5.0%**	0%	57	5%	57	0%	57	5%	57	5%	57	11%	57	0%	57	5%	57	12%	57	7%	57		
	FY19Q4	**6.6%**	2%	57	3.5%	57	4%	57	4%	57	9%	57	12%	57	0%	57	7%	57	7%	57	19%	57		
	SATP Trend																							
Burkina Faso	FY19Q1	**56%**	100%	1	100%	1	0%	1	0%	1	100%	1	0%	1					100%	1	0%	1	100%	1
	FY19Q2	**29%**	0%	1	0%	1	0%	1	0%	1									100%	1	0%	1	100%	1
	FY19Q3	**14%**	0%	1	0%	1	0%	1	100%	1									0%	1	0%	1	0%	1
	FY19Q4	**0%**	0%	1	0%	1	0%	1	0%	1									0%	1	0%	1	0%	1
	SATP Trend																							
Burma	FY19Q1	**100%**							100%	1									100%	1				
	FY19Q2	**21%**							20%	20									25%	20			0%	2
	FY19Q3	**79%**							70%	20									85%	20			100%	2
	FY19Q4	**21%**							5%	20									40%	20			0%	2
	SATP Trend																							

Country	Project Quarters	Overall TO2 SATP rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AS/AQ 100/270mgx3)	Denominator	First-line ACTs (AS/AQ 100/270mgx6)	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Burundi	FY19Q1	**47%**									32%	72	40%	65	37%	70	51%	73	25%	67	37%	67	77%	141
	FY19Q2	**41%**									19%	75	31%	72	33%	82	35%	79	27%	74	51%	71	67%	141
	FY19Q3	**43%**									28%	94	28%	95	32%	96	31%	96	26%	97	40%	89	89%	141
	FY19Q4	**36%**									29%	90	33%	89	31%	89	13%	89	18%	89	38%	47	84%	95
	SATP Trend																							
Cameroon	FY19Q1																							
	FY19Q2	**9%**	0%	6	0%	6	0%	6	17%	6	0%	13	36%	14	7%	15	0%	15	15%	13	7%	14		
	FY19Q3	**14%**	0%	6	33%	6	33%	6	0%	6	17%	12	8%	12	0%	12	0%	12	22%	18	22%	18		
	FY19Q4	**16%**	0%	6	0%	6	0%	6	33%	6	13%	8	29%	7	0%	7	29%	7	29%	14	14%	14		
	SATP Trend																							
Ethiopia	FY19Q1	**14%**	11%	18	22%	18	11%	18	11%	18									16.7%	18				
	FY19Q2	**14%**	11%	19	5%	19	5%	19	32%	19									15.8%	19				
	FY19Q3	**13%**	16%	19	0%	19	16%	19	5%	19									26.0%	19				
	FY19Q4	**11%**	5%	19	0%	19	11%	19	11%	19									26.0%	19				
	SATP Trend																							
Ghana	FY19Q1	**15%**	33%	33	3%	33	0%	33	3%	33	6%	33	0%	33	24%	33	12%	33	30%	33	33%	33		
	FY19Q2	**10%**	9%	33	0%	33	0%	33	27%	33	3%	33	0%	33	0%	33	0%	33	36%	33	24%	33		
	FY19Q3	**18%**	15%	33	33%	33	27%	33	27%	33	0%	33	0%	33	12%	33	0%	33	24%	33	39%	33		
	FY19Q4	**13%**	3%	33	6%	33	9%	33	24%	33	6%	33	6%	33	24%	33	12%	33	18%	33	18%	33		
	SATP Trend																							

Country	Project Quarters	Overall TO2 SATP rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AS/AQ 100/270mgx3)	Denominator	First-line ACTs (AS/AQ 100/270mgx6)	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Guinea	FY19Q1	**17%**	14%	7	42%	7	0%	7	14%	7									14%	7	14%	7		
	FY19Q2	**12%**	14%	7	14%	7	0%	7	29%	7									14%	7	0%	7		
	FY19Q3	**24%**	29%	7	29%	7	14%	7	14%	7									43%	7	14%	7		
	FY19Q4	**36%**	29%	7	29%	7	71%	7	0%	7									43%	7	43%	7		
	SATP Trend																							
Liberia	FY19Q1	**12%**	0%	3	0%	3	0%	3	0%	3	33%	3	0%	3	0%	3	0%	3	33%	3	0%	3	67%	3
	FY19Q2	**33%**	0%	3	0%	3	0%	3	0%	3	33%	3	67%	3	0%	3	33%	3	67%	3	67%	3	100%	3
	FY19Q3	**30%**	33%	3	0%	3	0%	3	33%	3	33%	3	67%	3	0%	3	33%	3	67%	3	0%	3	67%	3
	FY19Q4	**30%**	67%	3	67%	3	67%	3	0%	3	33%	3	0%	3	67%	3	0%	3	0%	3	0%	3	33%	3
	SATP Trend																							
Malawi	FY19Q1	**43%**	0%	2	0%	2	0%	2	0%	2									100%	2	100%	2	100%	2
	FY19Q2	**57%**	100%	2	0%	2	0%	2	0%	2									100%	2	100%	2	100%	2
	FY19Q3	**57%**	100%	2	0%	2	100%	2	100%	2									100%	2	0%	2	0%	2
	FY19Q4	**43%**	100%	3	0%	3	0%	3	100%	3									100%	3	0%	3	0%	3
	SATP Trend																							

Country	Project Quarters	Overall TO2 SATP rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AS/AQ 100/270mgx3)	Denominator	First-line ACTs (AS/AQ 100/270mgx6)	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Mali	FY19Q1	**28%**	33%	3	33%	3	0%	3	0%	3									33%	3	67%	3		
	FY19Q2	**3%**	7%	15	0%	15	0%	17	0%	16									7%	15	7%	15		
	FY19Q3	**6%**	17%	6	0%	6	0%	6	0%	6									17%	6	0%	6		
	FY19Q4	**19%**	50%	6	0%	6	33%	6	17%	6									17%	6	0%	6		
	SATP Trend																							
Mozambique	FY19Q1	**36%**	33%	36	56%	36	39%	36	31%	36									44%	36	17%	36	33%	36
	FY19Q2	**33%**	33%	39	26%	39	36%	39	26%	39									36%	39	26%	39	51%	39
	FY19Q3	**28%**	18%	39	26%	39	46%	39	31%	39									38%	39	18%	39	18%	36
	FY19Q4	**31%**	38%	39	15%	39	26%	39	33%	39									46%	39	21%	39	39%	36
	SATP Trend																							
Nigeria	FY19Q1	**20%**	0%	1	0%	1	100%	1	0%	1	0%	1	0%	1	0%	1	0%	1	0%	1	100%	1		
	FY19Q2	**10%**	0%	1	0%	1	0%	1	0%	1	0%	1	0%	1	0%	1	0%	1	100%	1	0%	1		
	FY19Q3	**50%**	100%	1	100%	1	0%	1	100%	1	0%	1	0%	1	100%	1	0%	1	100%	1	0%	1		
	FY19Q4	**60%**	100%	1	100%	1	0%	1	0%	1	100%	1	100%	1	0%	1	100%	1	0%	1	100%	1		
	SATP Trend																							
Rwanda	FY19Q1	**23%**	29%	31	23%	31	19%	31	23%	31									19%	31				
	FY19Q2	**35%**	32%	31	32%	31	42%	31	39%	31									32%	31				
	FY19Q3	**34%**	32%	31	32%	31	45%	31	23%	31									39%	31				
	FY19Q4	**34%**	29%	31	35%	31	35%	31	32%	31									35%	31				
	SATP Trend																							

Country	Project Quarters	Overall TO2 SATP rate	First-line ACTs (AL 6X1)	Denominator	First-line ACTs (AL 6X2)	Denominator	First-line ACTs (AL 6X3)	Denominator	First-line ACTs (AL 6X4)	Denominator	First-line ACTs (AS/AQ 100/270mgx3)	Denominator	First-line ACTs (AS/AQ 100/270mgx6)	Denominator	First-line ACTs (AS/AQ 25/67.5mg)	Denominator	First-line ACTs (AS/AQ 50/135mg)	Denominator	RDTs for Malaria	Denominator	Sulphadoxine-pyrimethamine (SP)	Denominator	LLINs	Denominator
Uganda	FY19Q1	**17%**	33%	3	67%	3	0%	3	0%	3									0%	3			0%	3
	FY19Q2	**11%**	67%	3	0%	3	0%	3	0%	3									0%	3			0%	3
	FY19Q3	**28%**	33%	3	67%	3	0%	3	0%	3									67%	3			0%	3
	FY19Q4	**39%**	0%	3	0%	3	100%	3	67%	3									33%	3			33%	3
	SATP Trend																							
Zambia	FY19Q1	**39%**	33%	3	0%	3	100%	3	33%	3									67%	3	0%	3		
	FY19Q2	**61%**	100%	3	33%	3	67%	3	67%	3									100%	3	0%	3		
	FY19Q3	**50%**	0%	3	33%	3	100%	3	67%	3									100%	3	0%	3		
	FY19Q4	**0%**	100%	1	100%	1	100%	1	100%	1									100%	1	0%	1		
	SATP Trend																							
Zimbabwe	FY19Q1	**17%**	100%	1	0%	1	0%	1	0%	1									0%	1	0%	1		
	FY19Q2	**17%**	100%	1	0%	1	0%	1	0%	1									0%	1	0%	1		
	FY19Q3	**33%**	100%	1	0%	1	0%	1	100%	1									0%		0%	1		
	FY19Q4	**33%**	100%	1	0%	1	0%	1	100%	1									0%	1	0%	1		
	SATP Trend																							

"Stocked according to plan" (SATP) signifies stock observations that are within pre-determined maximum and minimum stock thresholds based on average monthly consumption. Denominator in this indicator means total number of observations conducted at all central and first sub-national storage sites from which GHSC-PSM collects data. Note: Gray indicates cells where GHSC-PSM does not have data points.

Possible reasons are: 1) Commodities are not tracer commodities for that country or data are not available from that country's LMIS; 2)Periods of time for which data for those commodities were not available or reporting systems were not ready to provide that information; 3)Activities had not started yet in those countries.

Annex O. LMIS Reporting Rates from Service Delivery Points

Indicator B3. Service delivery point (SDP) reporting rate to the logistics management information system (LMIS)

Country	Project Quarters	Overall Reporting Rate	Denominator
TO2 Overall	FY19Q1	**90%**	21,265
	FY19Q2	**87%**	22,625
	FY19Q3	**77%**	28,492
	FY19Q4	**82%**	26,661
Angola	FY19Q1	**100%**	12
	FY19Q2	**47%**	980
	FY19Q3	**63%**	980
	FY19Q4	**75%**	954
Burkina Faso	FY19Q1	**73%**	2,303
	FY19Q2	**76%**	2337
	FY19Q3	**57%**	2,337
	FY19Q4	**1%**	2337
Burma (non-project supported sites)	FY19Q1	**98%**	4,119
	FY19Q2	**100%**	4,131
	FY19Q3	**100%**	4,131
	FY19Q4	**96%**	4,188
Burundi (non-supported)	FY19Q1	**90%**	808
	FY19Q2	**83%**	861
	FY19Q3	**87%**	863
	FY19Q4	**78%**	934
Ethiopia	FY19Q1	**82%**	1,045
	FY19Q2	**84%**	1,044
	FY19Q3	**84%**	1,044
	FY19Q4	**80%**	1,044
Guinea	FY19Q1	**96%**	463
	FY19Q2	**97%**	505
	FY19Q3	**100%**	505
	FY19Q4	**98%**	522
Malawi	FY19Q1	**100%**	685
	FY19Q2	**94%**	656
	FY19Q3	**96%**	643
	FY19Q4	**92%**	680
Mali	FY19Q1	**87%**	1,227
	FY19Q2	**96%**	1,222
	FY19Q3	**93%**	1,274
	FY19Q4	**96%**	1,275
Mozambique	FY19Q1	**56%**	648
	FY19Q2	**65%**	879
	FY19Q3	**75%**	757

Country	Project Quarters	Overall Reporting Rate	Denominator
	FY19Q4	**68%**	923
Niger	FY19Q1		3,641
	FY19Q2		3,666
	FY19Q3	**32%**	3,687
	FY19Q4		3,681
Nigeria	FY19Q1	**99%**	3,641
	FY19Q2	**98%**	3,666
	FY19Q3	**98%**	3,687
	FY19Q4	**98%**	3,681
Rwanda	FY19Q1	**94%**	586
	FY19Q2	**93%**	590
	FY19Q3	**96%**	590
	FY19Q4	**94%**	590
Uganda	FY19Q1	**100%**	657
	FY19Q2	**97%**	657
	FY19Q3	**97%**	657
	FY19Q4	**98%**	657
Zambia	FY19Q1	**89%**	2,209
	FY19Q2	**92%**	2,214
	FY19Q3	**92%**	2,225
	FY19Q4	**92%**	2,248
Zimbabwe	FY19Q1	**93%**	1,705
	FY19Q2	**80%**	1,705
	FY19Q3	**41%**	1,705
	FY19Q4	**52%**	1,705

Country and task order reporting rates are for service delivery points located in GHSC-PSM-supported regions, unless otherwise noted. Note: Gray indicates cells where GHSC-PSM does not have data points.

Possible reasons are: 1) Commodities that are not tracer commodities for that country or data is not available from their LMIS; 2)Periods of time for which data for those commodities was not available or reporting systems were not ready to provide that information; 3)Activities had not started yet in those countries

*Countries during start-up period were only able to report data out-of-cycle

Annex P-a. Country Supply Chain Indicators

B4. Average rating of in-country data confidence at the central, subnational, and SDP levels

GHSC-PSM developed a data quality assessment (DQA) user guide to measure the average rating of in-country data confidence. Countries are scored on a scale of 0-3 for each of three data quality attributes: data completeness, accuracy, and timeliness. For each site, the three scores are summed to get a score ranging from 0 to 9. A score of 8-9 is considered "very good," 6-7 is considered "good," 4-5 is "fair," 2-3 is "poor," and 0-1 is "very poor."

Country	Angola	Burundi	Cameroon	Ethiopia	Ghana	Guinea	**TO2 Overall FY18**	6.71 [1151]
Rating	6.32 [53]	7.55 [55]	4.01 [79]	6.82 [96]	3.0 [35]	7.09 [31]		
Country	Kenya	Malawi	Mali	Mozambique	Niger	Nigeria		
Rating	8.12 [118]	8.3 [70]	7.58 [78]	6.78 [74]	5.38 [54]	6.58 [165]		
Country	Rwanda	Uganda	Zambia	Zimbabwe				
Rating	5.97 [116]	8.19 [32]	7.51 [45]	7.52 [50]				

The number of sites visited, the levels of the supply chain assessed, and the extent to which countries were able to conduct representative assessments varied per country. The number of sites is in [brackets] next to the score. In many instances, the data have limited ability to be generalized outside of the sites visited. **This data represents TO2 commodities ONLY**

B5. Percentage of GHSC-PSM countries conducting annual forecasts

TO2 Countries			**94%**	Denominator		**16 countries**	
Angola	YES	Ghana	YES	Mali	YES	South Sudan	YES
Burkina Faso	YES	Guinea	YES	Mozambique	YES	Uganda	NO
Burundi	YES	Madagascar	YES	Niger	YES	Zambia	YES
Ethiopia	YES	Malawi	YES	Rwanda	YES	Zimbabwe	YES

B7. Percentage of total spent or budgeted on procurement of commodities for public sector services by the government, USG, or other sources

Country	Host Country	USG	Global Fund	Other	Total
Angola	$685,094	$7,469,302	$7,757,164		$15,911,560
Burkina Faso	$642,896	$9,426,949	$47,226,990	$4,065,593	$61,362,428
Burundi		$549,600			$549,600
Cameroon	$58,836,436	$5,240,318	$7,153,342		$71,230,097
Ethiopia		$13,395,810	$43,065,016	$35,824,255	$92,285,081
Ghana	$1,600,000	$8,800,500	$8,119,003		$18,519,503
Guinea		$5,244,468	$5,193,973		$10,438,441
Kenya		$2,607,274			$2,607,274
Liberia		$761,844			$761,844
Malawi		$7,532,111			$7,532,111
Mali	$1,029,376	$4,640,255			$5,669,631
Mozambique		$5,137,906	$10,873,307	$78,616	$16,089,828
Niger	$1,033,821	$3,504,232		$1,285,295	$5,823,348
Nigeria		$29,110,319			$29,110,319
Rwanda	$214,526	$2,718,810	$6,292,196		$9,225,532
Uganda	$2,972,746	$14,874,400	$22,031,601	$862,128	$40,740,876
Zambia	$8,251,416	$5,388,657	$3,287,620		$16,927,693
Zimbabwe	$238,554	$1,450,014	$665,784		$2,354,352

These funding figures represent the budget information that was accessible by GHSC-PSM staff. An absence of a figure in a particular cell, does not definitively imply that this funding does not exist, rather it was not available during the data collection period.

B10. Percentage of GHSC-PSM-supported countries that have a functional logistics

TO2 Countries			**72%**	Denominator		18 countries	
Angola	NO	Ethiopia	YES	Mali	YES	Rwanda	YES
Burkina Faso	YES	Ghana	YES	Mozambique	YES	Uganda	NO
Burma	NO	Guinea	YES	Niger	NO	Zambia	YES
Burundi	YES	Kenya	YES	Nigeria	YES	Zimbabwe	YES
Cameroon	NO	Malawi	YES				

Annex P-b. Country Supply Chain Indicators (cont.)

B12. Mean absolute percent consumption forecast error, with forecast bias variant

Mean abosolute percent error (MAPE): **Numerator:** Absolute value of the difference between the actual quantities of products consumed at SDPs during the annual period minus the forecasted consumption for the annual period
Denominator: Sum of the actual quantities of products consumed during the annual period

Countries	First-line ACTs (AL 6X1)	First-line ACTs (AL 6X2)	First-line ACTs (AL 6X3)	First-line ACTs (AL 6X4)	First-line ACTs (AS/AQ 100/270mgx3)	First-line ACTs (AS/AQ 100/270mgx6)	First-line ACTs (AS/AQ 25/67.5mg)	First-line ACTs (AS/AQ 50/135mg)	Rapid Diagnostic Tests for Malaria	Sulphadoxine-pyrimethamine (SP)	LLINs
Burkina Faso	23%	32%	(-)73%	(-)48%					24%	(-)9%	(-)36%
Burundi					(-)17%	(-)112%	(-)58%	(-)35%	(-)3%	(-)28%	8%
Ethiopia	40%	48%	50%	36%					46%	(-)1%	
Ghana	23%	15%	32%	(-)21%	34%	72%	(-)2%	(-)155%		(-)73%	(-)26%
Guinea	17%	7%	(-)2%	(-)6%						7%	(-)4%
Kenya										(-)35%	(-)34%
Liberia	91%	92%	80%	91%	56%	36%	23%	(-)63%	(-)81%	86%	8%
Malawi	(-)38%	(-)10%	(-)5%	(-)15%					4%	(-)16%	(-)5%
Mali	4%	(-)7%	(-)47%	(-)19%					(-)15%	14%	11%
Mozambique	(-)18%	3%	(-)27%	(-)15%					(-)11%	(-)4%	(-)27%
Niger	7%	7%	27%	47%					(-)182%	20%	8%
Nigeria	(-)6%	(-)4%	2%	(-)2%	(-)81%	(-)98%	(-)21%	(-)80%		2%	(-)101%
Rwanda	10%	(-)22%	(-)21%	(-)19%						(-)42%	
Uganda	(-)88%	3%	5%	2%					6%	0%	-794%
Zambia	10%	31%	50%	28%						(-)69%	(-)2092%
Zimbabwe	(-)13%	(-)18%	(-)26%	24%						(-)25%	(-)14%

Annex Q. Technical Independence

B8. Percentage of targeted supply chain activities in which the host country entity has achieved technical independence with GHSC-PSM technical assistance

Supply chain activities displayed below are only for countries that receive Task Order 2 funding for technical assistance. Targeted activities have been selected and agreed to by each GHSC-PSM field office and USAID mission from a standard list of 29 core supply chain actvities. Give the current country context and anticipated project resources in the coming years, targeted activities are expected to be technically independent by the end of the project in 2023.

Country	Cross Cutting Activities in TO2 funded countries		TO2 specific Activities in TO2 funded countries		All Activities Combined for TO2 funded countries		
	Technically Independent	Targeted for Independence	Technically Independent	Targeted for Independence	Total Activities Technically Independent	Total Activities Targeted	Percentage of activities considered technically independent
Angola	0	1	0	2	0	3	0%
Burkina Faso			7	11	7	11	64%
Burma	0	11	0	3	0	14	0%
Burundi	0	4	1	3	1	7	14%
Cambodia	0	7			0	7	0%
Cameroon	0	12			0	12	0%
Ethiopia	0	7			0	7	0%
Ghana	0	13			0	13	0%
Guinea	0	11	0	3	0	14	0%
Kenya	0	10			0	10	0%
Liberia	0	11			0	11	0%
Malawi	0	6			0	6	0%
Mali	2	9	0	1	2	10	20%
Mozambique	0	4			0	4	0%
Niger			1	7	1	7	14%
Rwanda	0	4			0	4	0%
Sierra Leone			0	30	0	30	0%
Zambia	0	5			0	5	0%
Zimbabwe	7	12			7	12	58%
Grand Total	9	127	9	60	18	187	10%

USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM

PROCUREMENT AND SUPPLY MANAGEMENT

GHSC-PSM TASK ORDER 2 (MALARIA)

ANNUAL REPORT FISCAL YEAR 2019

INTERNAL ANNEX

ANNEX A. TO2 SHORT-TERM TECHNICAL ASSISTANCE TO PMI-SUPPORTED COUNTRIES

Name	Trip Dates	SOW	TO1	TO2	TO3	TO4
Angola						
Dércio Agostinho Duvane	9/2/2018-11/6/2018	The purpose of this trip is to kickoff activities under the initial six-month sub-task order with VillageReach for OpenLMIS implementation. In particular, during this trip Mr. Duvane will: Gather and define requirements (functional and non-functional); Gather data, documentation, and information related to standard operating procedures (SOPs), forms, eHealth architecture, and GS1; Conduct interviews with stakeholders and key informants regarding SOPs, eHealth architecture, and GS1; Conduct site visits and assessment; Provide technical assistance for stakeholder engagement.	13.90%	76.25%	9.85%	0%
EunMI Kim	10/13/2018-11/12/2018	The purpose of this consultancy will be to review and map the current process for registration of local and international pharmaceutical suppliers and distributors as well as current process of medicines and medical equipment in Angola and create an inter-ministerial standard operation procedure. Ms. Kim will also work on analyzing requirements for the DNME to digitalize the process and collect data for the database, so it may be maintained by the Ministry of Health (MOH). During her time in Angola, Ms. Kim will also coordinate meetings with the Technical Director, Distribution and Tracking Expert, and the DNME.	12.20%	71.05%	16.75%	0%
Christine Lenihan & Ryan Freeland	10/15/2018-11/2/2018	The purpose of this trip is to provide the essential training and knowledge transfer support to the Angolan Ministry of Health (MoH), with the objective to improve the stakeholder's understanding of the OpenLMIS system, refine the requirements gathered for subsequent configuration, and improve readiness for a full, national roll-out.	12.20%	71.05%	16.75%	0%
Ryan Freeland & Dércio Duvane	01/08/2019 to 01/25/2019	The purpose of this trip is to complete the final activities for the initial six-month sub-task order with VillageReach for OpenLMIS implementation. In particular, during this trip, Mr. Duvane and Mr. Freeland will: Validate and finalize present OpenLMIS functional and non-functional requirements; Validate, finalize, and present OpenLMIS interface requirements for DHIS2, warehouse management system (WMS), and reporting; Conduct implementation and roll-out workshop for pilot and production deployments; Present implementation guide, implementation roadmap, and M&E plan; Provide technical assistance on stakeholder engagement	11.82%	74.39%	13.79%	0.0%
Dercio Duvane	3/23/2019 - 4/17/2019	Mr. Dercio Duvane will support GHSC-PSM Angola in preparing for the implementation of OpenLMIS in Angola.	12%	74%	14%	0%
Dercio Duvane	4/21/2019 - 11/17/2019	The purpose of this trip is to support GHSC-PSM in preparing and execution of national implementation of OpenLMIS in Angola.	10%	73%	17%	0%
Dercio Duvane	5/4/2019 - 5/22/2019	To support GHSC-PSM in preparing for OpenLMIS Release 2 and to conduct training activities to train trainers in Angola.	12%	74%	14%	0%
Rebecca Turner	7/6/2019-7/14/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	10%	73%	17%	0%
Daniel Lim	8/19/2019 - 8/31/2019	Mr. Lim will travel to Angola to provide operational support to the GHSC-PSM in Angola field office.	10%	73%	17%	0%
Ben Leibert	8/21/2019 - 9/15/2019	The purpose of this trip is to support GHSC-PSM in the implementation of a localized OpenLMIS implementation on hardware provided by the MoH.	10%	73%	17%	0%
Karolina Sowulewska	8/26/2019 - 9/2/2019	Ms. Sowulewskawill travel to Angola to assess the security environment of the GHSC-PSM Angola project, residential security, and regional operations in Angola.	10%	73%	17%	0%

Barry Chovitz	9/2/2019 - 9/14/2019	Mr. Chovitz will conduct a strategic visit related to forecasting and supply planning (FASP) for malaria commodities and implementation of the OpenLMIS. Additionally, he will complete a review of progress made at the end of FY19 and to inform FY20 work plan in addition to onboarding two new Technical Directors.	10%	73%	17%	0%
Abdulganiyu Femi Sumaila	9/7/2019 - 9/28/2019	Dr. Sumaila will work with Angola's National School of Public Health (Escola Nacional de Saúde Publica – ENSP) in order to develop a training module and deliver it to a new post graduate specialization in public health supply chain management targeted towards Ministry of Health (MoH) logistics professionals.	10%	73%	17%	0%
Kaitlyn Roche	9/20/2019 - 9/27/2019	Following the GS1 conference in Nigeria, Kaitlyn Roche will travel to Angola to educate and create awareness of GS1 standards by co-leading a GS1 vision workshop for key stakeholders that results in a high-level GS1 road map for Angola.	10%	73%	17%	0%
Silverio Paixao	9/21/2019 - 9/27/2019	Following the GS1 conference in Nigeria, Silverio Paixao will travel to Angola to educate and create awareness of GS1 standards by co-leading a GS1 vision workshop for key stakeholders that are crucial to GS1 (Track and Trace) in Angola.	10%	73%	17%	0%
Burkina Faso						
Pierre de Vasson	9/30/18-10/05/18	Mr. De Vasson will conduct the logistics and warehousing training needs assessment to determine the content of the training. During the six-day short-term technical assistance, he will work with managers of the regional agencies to identify the areas of focus for the logistics and warehousing training to build staff capacity. Mr. De Vasson will work 13 days remotely prior to and following the STTA to prepare the training curriculum focused on CAMEG managers' needs.	0%	100%	0%	0%
Pierre de Vasson	11/25/18-12/07/18	The purpose of this second trip is for Mr. De Vasson to adjust the logistics training curriculum to CAMEG's needs and conduct the training for 15 CAMEG central and regional agencies as well as NMCP staff on health commodity logistics and warehouse management during an 11-day short-term technical assistance to support the implementation and debriefing of this activity.	0%	100%	0%	0%
Florence Beraud	1/12/2019-1/25/2019	GHSC-PSM in collaboration with pharmacy department of the ministry of health is supporting the public health school to integrate the training course on an integrated LMIS standard operation procedures (SOPs) into the pre-services training school curriculum. In June 2017, a Learning Specialist, consultant Florence Beraud, assisted GHSC-PSM in conducting an assessment on the possibility of integrating the logistics-training course into the pre-services training school curriculum. Findings and recommendations from the assessment indicated that the opportunity exists. The purpose of this STTA is to train a pool of trainers to teach the integrated LMIS module for the following programs: Pharmacist assistants & logisticians; Nurses & midwives; Nurse aids	0%	100%	0%	0%
Philippe Delamare	4/6/2019 - 4/19/2019	Mr. Delamare will travel to Ouagadougou, Burkina Faso to complete an assessment of CAMEG's procedures and documents for warehousing and supply chain against ISO 9001:2015. The resulting gap analysis will provide a clear road map towards ISO certification.	0%	100%	0%	0%
Philippe Delamare	6/24/2019 - 7/7/2019	Mr. Delamare will travel to Ouagadougou, Burkina Faso to assess and strengthen the implementation of the 'adressage' roadmap or reconfiguration of CAMEG warehouses at the central level and support CAMEG in starting to implement 'adressage' in regional warehouses	0%	100%	0%	0%
Parfait Nyuito Edah	7/7/2019 - 7/14/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	0%	100%	0%	0%
Alix Harou	7/15/2019 - 7/28/2019	Ms. Harou will travel to Ouagadougou to support GHSC-PSM Country Director and staff, monitor progress of FY19 TO2 Malaria and GHSA activities, and prepare the field office for FY20 work planning.	0%	100%	0%	0%

Amina Kandil	7/24/2019 - 7/27/2019	The purpose of this trip is to conduct the GHSA kickoff meeting and launch the GHSA activity in Burkina Faso by introducing the Emergency Supply Chain Framework and Playbook to Core Team members and providing necessary coaching.	0%	100%	0%	0%
Nicolas Pacoret de Saint Bon, and Samir Drissi	7/29/2019 - 8/19/2019	The purpose of this trip is to conduct the GHSA kickoff meeting and launch the GHSA activity in Burkina Faso by introducing the Emergency Supply Chain Framework and Playbook to Core Team members and providing necessary coaching.	0%	100%	0%	0%
Nicolas Pacoret de Saint Bon, and Samir Drissi	9/17/2019-9/27/2019	The purpose of this activity is to provide strategic support during the simulation exercises developed to test the emergency supply chain framework designed for Burkina Faso and lead the subsequent conclusion workshop and debrief with local stakeholders to close out the Global Health Security Agenda (GHSA) activity in Burkina Faso.	0%	100%	0%	0%
Amina Kandil	9/24/2019-9/27/2019	The purpose of this activity is to provide strategic support during the simulation exercises developed to test the emergency supply chain framework designed for Burkina Faso and lead the subsequent conclusion workshop and debrief with local stakeholders to close out the Global Health Security Agenda (GHSA) activity in Burkina Faso.	0%	100%	0%	0%
Burma						
Anwar, Mehmood	10/6/2018-10/14/2018	GHSC-PSM Burma Country Mehmood Anwar will travel to Washington, DC to attend an orientation at Chemonics' Crystal City GHSC-PSM headquarters. He will receive a detailed briefing on Chemonics' core values and ethics, contract and procurement tools, financial requirements, business systems, and performance expectations.	20% - Mission HIV/AIDS; 50% - Mission TB	30%	0%	0%
Michael Wolf	11/1/2018-11/16/2018	The purpose of this assignment is to recruit and begin the hiring process for 5 competent technical staff members, two procurement and supply officers, a procurement and supply manager, a service delivery officer, and a procurement and logistics manager.	20% - Mission HIV/AIDS; 50% - Mission TB	30%	0%	0%
Ostrega, Arthur	12/1/2018-12/15/2018	In FY19, PSM/Burma will establish an M&E plan that is properly linked to the project's global plan but also measures the results of the project's country specific efforts. Mr. Ostrega will be responsible for drafting the plan in consultation with the mission and project staff. He will also be tasked with putting in place the required systems and ensuring that GHSC-PSM's field office staff have the necessary tools to collect, aggregate, and analyze the data required to measure results. In addition, with the new requirements from PEPFAR for data reporting on stock-out of HIV/AIDS commodities, Mr. Ostrega will assess the feasibility of monthly reporting from SDP level for HIV/AIDS commodities. And finally, Mr Ostrega will provide technical assistance to the MIS team in two areas: 1.) efforts to increase the use of LMIS data for supply chain related decision making at the township and regional levels and 2.) development of a substantial evidence base to support a transition of MIS technical assistance to local counterparts in three regions.	68%	32%	0%	0%
Thwe Thein, Yin Thwe	12/08/2018-12/15/2018	Ms. Thein, the Burma project Finance and Operations Director will travel to the PSM Home Office in Crystal City. These trainings will enable Ms. Thein to effectively execute her duties as the Finance and Operations Director for GHSC-PSM Burma. She will also receive trainings that will focus on finance management and budgeting, contractual requirements and Chemonics' policies, ensuring that the GHSC-PSM office is operating within compliance or USAID rules and regulations.	20% – HIV Mission 50% – TB Mission	30%	0%	0%
Pierre de Vasson	01/14/2019-01/25/2019	Mr. Vasson will travel to Rangoon, Burma to support the activities for revising Burma's National Supply Chain Strategy developed in September of 2015. To complement this, a fully costed supply chain operation plan will be developed to demonstrate a clear vision and path forward for the supply chain in Burma.	68%	32%	0%	0%

Ian Ryden	02/28/2019-03/16/2019	In accordance with discussions and planning conducted with the Burma Mission, Ian Ryden will assess the National Aids Program (NAP), National TB Program (NTP) and the National Malaria Control Program (NMCP) warehouses in States/Regions, develop recommendations for optimization of warehouse space and operations and support the PSM team to select high impact interventions to support during FY19.	68%	32%	0%	0%
Pierre de Vasson	03/10/2019-03/22/2019	The purpose of this STTA is to follow up on the initial scoping trip performed in January. This trip will consist of engaging stakeholders in face-to-face discussions and the hosting of several workshops to in order to fully develop the 2019-2021 Operational Plan of the Myanmar National Supply Chain Strategy 2015-2020.	68%	32%	0%	0%
Pierre de Vasson	4/17/2019 - 5/4/2019	Mr. de Vasson will travel to Burma to continue work being conducted to for the development of a national supply chain operational plan for the Ministry of Health and Sport of Myanmar. The goal, for this STTA, is to engage stakeholders in face-to-face discussions and hold several workshops to develop the finalized 2019-2021 operation plan of the strategic plan.	68%	32%	0%	0%
Thuy Huong Ha	4/20/2019 - 5/11/2019	Thuy Huong Ha, Managing Director of the GHSC-PSM project in Burma will travel to Burma to attend high-level meetings and workshops with stakeholders and partners within the Ministry of Health and Sports of Myanmar. In addition, Ms. Ha will conduct visits with the USAID Mission and pertinent GHSC-PSM counterparts on the progress and support provided by the project in Burma during the last quarter and in preparation for FY20 work planning.	68%	32%	0%	0%
Pierre de Vasson	5/19/2019 - 6/1/2019	Mr. de Vasson completed 3 STTAs in Myanmar in 2019 to initiate the development of the operational plan of the 2015 strategic plan for the MoHS of Myanmar. During the third STTA, the scenarios were confirmed, and the first draft of the operational plan was developed in a workshop. This fourth STTA will finalize and confirm the data and information of this draft, engage donors, finalize the plan and reach an overall endorsement from the MoHS.	68%	32%	0%	0%
Mehmood Anwar	6/29/2019 - 7/14/2019	Mr. Anwar will travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities. Mr. Anwar will travel to the US before the CD meeting to participate in technical, operational, and strategic sessions including meetings with the Managing Director, GHSC-PSM leadership, and the Burma PMU working closely with the members to develop a draft Gantt chart, narrative and budget for the FY20 fiscal year.	70%	30%	0%	0%

Cambodia						
Sopheak Sok; Daravuth Yang; Nihm Sothearith	11/12/18-11/16/18	Mr. Nhim Sothearith and Dr. Daravuth Yang from the Department of Drug and Food of Cambodia will travel to Rangoon to participate in an e-LMIS Exposure Visit . Prior to rolling out mSupply in Cambodia, this exposure visit to Burma would provide an opportunity to see the use of mSupply based e-LMIS in practice and to learn from Burmese counterparts who are involved in implementing and using this state of the art system. Mr. Sopheak Sok from GHSC-PSM Cambodia will travel to Rangoon to participate in an e-LMIS Exposure Visit . Prior to rolling out mSupply in Cambodia, this exposure visit to Burma would provide an opportunity to see the use of mSupply based e-LMIS in practice and to learn from Burmese counterparts who are involved in implementing and using this state of the art system.	12.5%; -311 Mission 12.5%; 312 Mission	75%	0%	0%
Thuy Huong Ha; Samuel Stevens	2/15/19-3/8/19; 3/1/19-3/29/19	Ms. Thuy Huong Ha will travel to Phnom Penh to provide interim managerial and technical support as acting Country Director to the GHSC-PSM Cambodia field office. Mr. Samuel Stevens will travel to Phnom Penh to provide interim managerial support as acting Country Director to the GHSC-PSM Cambodia field office.	0%	100%	0%	0%

Mackenzie Chernushin	6/2/2019 - 6/15/2019	Mackenzie Chernushin will travel to Phnom Penh, Cambodia to provide robust procurement and ARTMIS trainings, bolster the field office's understanding of compliance and competition, conduct desk audit of project records, and support the recruitment for the project's Program Advisor position. She will also support the elaboration of the initial draft of the project budget for FY20.	0%	100%	0%	0%
Nathalie Albrow	6/8/2019 - 6/19/2019	Nathalie Albrow will travel to Phnom Penh, Cambodia to review technical project activities, administer an overview orientation to the newly hired GHSC-PSM project leader, and lead a strategy and design workshop for field office staff and key stakeholders in preparation for FY20 work planning.	0%	100%	0%	0%
Eric Okimoto	6/28/2019 - 7/12/2019	Mr. Okimoto will travel to Phnom Penh, Cambodia to support GHSC-PSM in Cambodia project field office and local partners in the implementation of the eLMIS or mSupply Pilot.	75%	25%	0%	0%
Catherine Dame	7/20/2019 - 8/3/2019	Catherine Dame will support the national forecast exercise for malaria commodities, review national forecasting tools, conduct quantification training and an introduction of Quantimed and PipeLine to national programs including HIV/AIDS and Malaria.	50%	50%	0%	0%

Cameroon						
Jonathan Gatke	9/20/18-10/6/18	The ST Acting Operations Director will fill the short-term absence of the LT Operations Director, who is taking annual leave during the month of September. As many activities are planned to occur in September with the close of the fiscal year, the ST Acting Operations Director will play a lead role in the implementation of comprehensive management policies and procedures for the project, management of procurement and administrative staff members, and providing oversight of all operational activities of the GHSC-PSM Cameroon project. This will ensure that necessary support is occurring during several key initiatives and start to operationalize the FY19 work plan to ensure a smooth transition.	10%	90%	0%	0%
Tache Philippe M.	10/26/18-11/4/18	GHSC-PSM in Cameroon was accepted for a poster presentation linked to its work in using geotagging distributions of Sulfadoxine Pyrimethamine + Amodiaquine (SP+AQ) during the annual Seasonal Malaria Chemoprevention campaign titled, "Large-scale implementation of seasonal malaria chemoprevention in far north Cameroon: The use of geographic information system tracking in supply chain management". During this conference, Dr. Tache will communicate the important initiatives being brought by GHSC-PSM in Cameroon through USAID surrounding increased distribution visibility at low costs. Additionally, the transfer of information in attending other presentations and networking events will allow the project to bring new ideas to how it can implement activities focused on Malaria and the overall supply chain in Cameroon to advance public health initiatives.	0%	100%	0%	0%
Marcos Santillan	12/2/18-2/13/18	The purpose of this scope of work is for Finance and Compliance Review Manager Marcos R. Santillan to review financial and operational files and procedures to ensure compliance with GHSC-PSM IDIQ contract requirements and Chemonics' procedures and guidelines.	40%	60%	0%	0%
Patrick Gaparayi, Glenn Muffih	11/22/18-12/4/18	The purpose of this scope of work is to attend the GHSC Summit, which aims to bring together people, products, and processes to maximize the impact of global health supply chains. The participants will gather experience and lessons learned from recent global supply chain best practices for adaptation, as applicable. Most importantly, the project was selected to present on its participation in this year's SMC campaign. The two GHSC-PSM Cameroon staff members (TO1/TO2) and two MOH Staff (TO2) will present on the use of delivery tracking systems to ensure efficiency and accountability in the implementation of SMC in the PMI-supported regions of Cameroon.	40%	60%	0%	0%

Jean Pierre Kidwang, Armel Bombah	11/22/18-12/4/18	The purpose of this scope of work is to attend the GHSC Summit, which aims to bring together people, products, and processes to maximize the impact of global health supply chains. The participants will gather experience and lessons learned from recent global supply chain best practices for adaptation, as applicable. Most importantly, the project was selected to present on its participation in this year's SMC campaign. The two GHSC-PSM Cameroon staff members (TO1/TO2) and two MOH Staff (TO2) will present on the use of delivery tracking systems to ensure efficiency and accountability in the implementation of SMC in the PMI-supported regions of Cameroon.	0%	100%	0%	0%
Rolando A. Berrios	1/20/19-1/31/19	The objective of the STTA is to comprehensively map the workflow of all transportation procedures, align the TransIT tool (transportation management system information tool), and the electronic Proof of Delivery (ePOD) application for distribution managers and other potential tool users within the GHSC-PSM project in Cameroon with a focus in the two Presidents Malaria Initiative (PMI) supported regions of North and Far North where the project is involved in last-mile distribution of all antimalarial commodities, rapid diagnostics test kits and Long Lasting Insecticide-treated Nets (LLINs). This initial work will inform the project and government counterparts to extend the application of the tool at central and regional level and will recommend an operational plan to be used during the forthcoming LLIN mass distribution campaign and next year's last mile distribution of the pharmaceutical commodities used in the Seasonal Malaria Chemoprevention (SMC) campaign.	0%	100%	0%	0%
Lynde Kuipers	5/19/2019 - 5/26/2019	Lynde Kuipers will travel to Yaoundé to provide leadership support for the review and planning of FY19 activity implementation, lay the groundwork for FY20 work plan and budget development, and work to identify means to improve operational and financial project activities.	40%	60%	0%	0%
Hany Abdullah	5/19/2019 - 5/31/2019	Ms. Abdullah will assess the current state of eLMIS in Cameroon's public health sector. This will be achieved by conducting in-country consultations with relevant public health supply chain stakeholders to better understand the strengths and weaknesses of each of the existing information systems in the supply chain, completing a landscape analysis report of the existing landscape, and developing a roadmap for eLMIS in the public health supply chain and landscape requirements report based on the consultations and workshops, as well as a review of documentation that has been developed by GHSC-PSM.	40%	60%	0%	0%
Patrick Gaparayi	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	40%	60%	0%	0%
Hany Abdallah	7/12/2019 - 7/20/2019	The objective is to facilitate a multi-stakeholder landscape requirements workshop in which the Ms. Abdallah shall present preliminary findings from the in-country consultative meetings conducted in May 2019 and utilize them in a participatory manner to build a consensus around the key features to dictate the national integrated eLMIS strategic plan.	40%	60%	0%	0%
Michael I. Egharevba,	7/29/2019 - 8/10/2019	Mr. Egharevba will travel to Yaoundé, Cameroon to implement a human resources supply chain assessment and develop a roadmap that identifies key activities, stakeholders and timelines required to implement the human resource strategy.	42%	58%	0%	0%
Jonathan Gatke	9/18/2019 - 10/9/2019	Mr. Gatke will travel to Maroua, Cameroon to provide operational and technical support to the Mass Distribution of LLINs in the Far North Region of Cameroon. Mr. Gatke will put in place mitigation measures to ensure last-mile distribution from health areas to distribution sites.	0%	100%	0%	0%

Vanina Olive Bowombe Ngalley; Xavier Lancelot Tetang Fouelefack; Tabi Nkeng	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	40%	60%	0%	0%
Tessa Jean-Pierre	9/23/2019 - 10/18/2019	Ms. Jean-Pierre will travel to Yaoundé, Cameroon to provide program management and operational support to the field office during a period of transition after the Country Director's resignation from the project. Ms. Jean-Pierre will also travel to Douala, Cameroon to provide leadership support to the field office close-out activities. During that time, she will ensure all contractual agreements are terminated, office equipment transferred, and completion of handover documents to relevant stakeholders.	40%	60%	0%	0%
Cote d'Ivoire						
Susan Bell	10/14/18-10/16/18	Susan Bell will travel to Cote d'Ivoire to evaluate GHSCO operations in Cote d'Ivoire and make recommendations to ensure quality assurance and contract compliance with the transition of La Nouvelle pharmacie de la Santé publique (NPSP) involvement in the clearance and delivery of GHSC-PSM procurements.	50%	50%	0%	0%
DRC						
Emily Adams	6/17/2019 - 6/28/2019	The purpose of this scope of work is to improve the overall collaboration and efficiency of GHSC-PSM procurement and delivery of commodities to DRC. Ms. Adams will work with the GHSC-TA customs clearance facilitation coordinators and lead coordination meetings between key stakeholders including the GHSC-TA DRC field office, USAID DRC Mission, freight forwarders, and local clearing agents.	40%	42%	8%	10%
Ethiopia						
Daniel Taddesse Teklemichael	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	31%	10%	42%	17%
Stefania Slabyj	8/11/2019 - 8/18/2019	Ms. Slabyj will visit the Ethiopia field office to support the development of the FY20 work plan and to provide technical support, in line with USAID priorities for work plan implementation.	27%	10%	45%	18%
Ghana						
Arthur Ostrega	3/31/2019 - 4/6/2019	Arthur Ostrega will travel to Accra, Ghana to engage in detailed planning and preparations for the upcoming implementations of the National Supply Chain Assessment toolkit in Ghana, and to build stakeholder engagement and ensure broad buy-in across the supply chain environment in-country.	33%	34%	30%	3%
Joseph Obi	6/23/2019 - 7/19/2019	Joseph Obi will travel to Accra, Ghana to participate in the handover of project finance and office operations from the outgoing Finance and Operations Director, Markos Layton.	33%	33%	30%	4%
Deogratius Kimera	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	33%	34%	30%	3%

Kevin Gandhi; Steve Thomas	7/14/2019 - 7/20/2019	Mr. Gandhi will travel to Ghana to install a cloud-based temperature and humidity monitoring system in Ghana's Eastern and Brong-Ahafo regional warehouses. These sensors will allow the field office, the Ghana Health Services (GHS), and any other stakeholders to continually monitor the temperature of these locations remotely. Mr. Thomas will travel to Ghana to shadow, receive training, and provide additional support for the installation of a cloud-based temperature and humidity monitoring system in Ghana's Eastern and Brong-Ahafo regional warehouses.	33%	34%	30%	3%
Kate Gulitashvili	7/28/2019 - 8/12/2019	Ms. Gulitashvili will conduct a strategic leadership visit to Ghana to review workplan implementation progress to date, facilitate FY20 workplan process, and provide operations and finance support during a transition period,	33%	33%	30%	4%
Arthur Ostrega	8/7/2019 - 8/24/2019	Arthur Ostrega will travel to Accra, Ghana to oversee the implementation of the NSCA being conducted by GHSC-PSM in Ghana. Mr. Ostrega will engage in stakeholder interviews, the NSCA Mapping Workshop and enumerator trainings. As the primary focal point for the NSCA activity, Mr. Ostrega will ensure the successful implementation of the data collection in-country.	33%	34%	30%	3%
Daniel Owusu-Afranie; Mathias Agbenyo Kwami	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	33%	34%	30%	3%

Guinea						
Arthur Ostrega	3/24/19-3/30/19	The primary purpose of this scope of work is to engage with stakeholders on the NSCA planning process and finalize implementation plans and details, namely: 1) Develop a detailed implementation plan for the NSCA, including: - Finalized list of facilities to visit - Finalized list of tracer products, agreed upon by all stakeholders - Finalized list of optional KPIs, by supply chain level, to suit customized requirements - Finalized timetable for data collection 2) Initiate development of detailed logistics plan for the NSCA (to be finalized in-country before the assessment), including: - SOW for data collectors to facilitate recruitment - Plans for supply mapping workshop and data enumerator trainings - Plans for hotels, transport, and staffing for assessment period The trip will also include meetings with various MoH departments and organizations.	0%	5%	37%	58%
Ishan Singhal	4/27/2019 - 5/11/2019	Mr. Singhal will travel to Guinea to install a cloud-based temperature and humidity monitoring system in Guinea's Conakry, Boké, and Labé warehouses. Two trucks will also be installed with sensors to allow the field office, the Central Pharmacy of Guinea (PCG), and any other stakeholders to continually monitor the temperature of these locations remotely for the pharmaceuticals stored in the cold rooms and refrigerators.	0%	10%	40%	50%
Isadora Vigier de la Tour	6/5/2019 - 6/25/2019	Isadora Vigier de la Tourwill travel to Conakry, Guineato oversee the logistics of the NSCAbeing conducted by GHSC-PSM in Guinea. Ms. Vigier de la Tourwill assist in facilitating and organizing stakeholder interviews, monitoring data collection by the local enumerators, and coordinating the NSCA Mapping Workshop and enumerator training.	0%	5%	37%	58%
Laura Bosco	6/5/2019 - 6/28/2019	Laura Boscowill travel to Conakry, Guinea to oversee the survey portion of the National Supply Chain Assessment(NSCA)being conducted by GHSC-PSM in Guinea.Ms. Bosco will ensure the survey tool is functioning correctly and being implemented accurately by the enumerators in country and will assist with the analysis of the results and their disseminationfollowing the activity.	0%	5%	37%	58%

Arthur Ostrega	6/7/2019 - 6/22/2019	Arthur Ostregawill travel to Conakry, Guinea to oversee the implementation of the NSCA being conducted in Guinea.Mr. Ostrega will engage in stakeholder interviews, the NSCA Mapping Workshopand enumerator trainings. As the primary focal point for the NSCA activity, Mr. Ostrega will ensure the successful implementation of the data collection in-country.	0%	5%	37%	58%
Claude Bahati	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	0%	5%	37%	58%
Gerard Bisama	7/8/2019 - 7/19/2019	Mr. Bisama will travel to Conakry, Guinea to assist GHSC-PSM Guinea in developing an interoperability system between DHIS-2 and e-SIGL Guinée. Mr. Bisama will additionally provide documentation and training to Ministry of Health staff to ensure the system's successful implementation.	0%	5%	45%	50%
Meriem Samaali	7/13/2019 - 7/20/2019	Finance and Compliance Review Manager Meriem Samaali will travel to Conakry, Guinea to review financial and operational files and procedures to ensure compliance with GHSC-PSM IDIQ contract and Task Order requirements, U.S. government rules and regulations, and Chemonics's procedures and policies.	0%	5%	38%	57%
John Durgavich	7/13/2019 - 7/29/2019	John Durgavich will travel to Conakry, Guinea to build the capacity of the central-level FASP staff to conduct annual forecast reviews and supply plans using Quantimed and Pipeline tools. In addition, this activity will help DNPM and DNSFN to quantify for FP/RH products, determine funding needs and finally mobilize resources needed to procure the quantified products over the 2019-2021 period.	0%	18%	68%	15%
Andrew Inglis	7/15/2019 - 7/26/2019	Mr. Inglis will travel to Guinea to provide technical assistance in improving the eLMIS with data visualization elements in order to initiate the popularization of the use of data at each level of the health pyramidal. Mr. Inglis will present a preliminary dashboard to key stakeholders in small focus-group discussions to identify the needs of decision makers and hold stakeholder meetings with in-country counterparts to develop an implementation and sustainability plan for using data in decision-making for the supply chain in Guinea.	0%	5%	41%	54%
Megan Burke	8/17/2019 - 8/31/2019	Ms. Megan Burke will travel to Conakry, Guinea to follow up on recent internal financial compliance review findings and to provide refresher operations and financial trainings to field office staff. She will also provide operations surge support in the absence of the Finance & Operations Director and assist with finalizing FY20 Work Plan budget .	0%	5%	38%	57%
Gerard Bisama	9/1/2019 - 9/14/2019	Mr. Bisama will travel to Conakry, Guinea to assist GHSC-PSM in Guinea in developing a District Health Information Software (DHIS2) interoperability framework for the Ministry of Health. In addition to developing the framework, Mr. Bisama will hold meetings with key stakeholders and document gaps in the existing systems.	0%	5%	45%	50%
Claude Bahati; Serge P. N'Guessan; Moussa Konate;	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	0%	4%	36%	60%
Dorothy Leab	9/16/2019 - 9/27/2019	Dorothy Leab will oversee GHSC-PSM work in Guinea for human resource capacity development of the supply chain management workforce. She will collaborate with in-country staff to train approximately 10 university teachers using curriculum and training materials developed through remote work. She will hold a debrief with GHSC-PSM Country Director and USAID/Guinea.	0%	5%	35%	60%
India						

Stephanie Wohler, Swaroop Jayaprakash, and Linda Wennick	11/28/2018 to 12/07/2018	Ms. Stephanie Wohler, Ms. Linda Wennick and Mr. Swaroop Jayaprakash traveled to Bangalore-India to ensure transition and knowledge transfer are properly completed. The purpose of the trip was to: 1. Meet the team and provide a more detailed overview of the program, its goals, and implementation methodologies to improve the team's depth of understanding 2. Ensure transition is fully completed and knowledge is transferred to the newly appointed team members 3. Organize multiple capacity building sessions allowing team members to discuss questions and get an insight on the implementation methodologies 4. Provide a business orientation on the use of such systems as COGNOS, EMPTORIS, WCS, and other integrations through an interactive and practice-based session 5. Confirm project communication approach to ensure that tickets, defects, and minor enhancements are being worked effectively given new time-zone 6. Identify areas of improvement and pinpoint technical gaps so that solutions can be developed to address them	57%	31%	10%	2%
Zane Keller	3/24/19-3/30/19	Mr. Zane Keller will travel to Bangalore to oversee GHSC-PSM work in India as part of the continual improvement of the IBM India MIS Operations and Maintenance team. Mr. Zane Keller will work with the team with improvement requirements gathering and help facilitate an update release for the ARTMIS system.	57%	31%	10%	2%

Liberia						
Philip Kwao	11/13/18–12/5/18	Mr. Kwao will travel to Monrovia, Liberia to support training, data collection, and analysis for the application of the revised End Use Verification (EUV) survey tool, software, and protocols. This STTA is needed because the GHSC-PSM project has never conducted a EUV activity in Liberia.	0%	100%	0%	0%
Grace Adeya	3/22/19-4/7/2019	At the request of the PMI Liberia team, Grace Adeya will conduct a strategic leadership visit to Liberia to review implementation progress to date of TO2 priority activities and identify areas for refinement. She will also provide overall strategic guidance for TO2 strategy for future initiatives in alignment with GHSC-PSM objectives and USAID Mission priorities.	0%	100%	0%	0%
Addis Demissie Gebretsadik	3/28/2019 - 4/12/2019	Mr. Gebrestadik will travel to Liberia to assist with the national quantification of Essential Medicines, revision of the Essential Medicines list, and review of all completed supply plans. He will also provide additional training to Ministry of Health personnel on relevant software tools.	25%	25%	0%	50%
Kiersten Rooke	3/30/2019 - 4/8/2019	Kiersten Rooke will travel to Liberia to strengthen GHSC-PSM's capacity to conduct effective monitoring and evaluation activities in Liberia. The M&E Specialist will work with the GHSC-PSM's Liberia M&E staff to review and finalize the fundamental tools of the M&E system, including the project M&E plan encompassing all health areas, a dedicated M&E plan for Global Health Ebola Team (GHET) activities, and data collection tools for both.	45%	10%	40%	5%
Zaher Moshtaq	4/8/2019 - 4/30/2019	The purpose of this assignment for Zaher Moshtaq is to assist field office in addressing outstanding FCR recommendations, carry out an assessment of the GHSC-PSM project accounting, finance, and operations existing practices, and provide mentorship to local team leads to address the identified challenges and maintain project performance in compliance with established procedures, rules, and regulations.	59%	19%	19%	4%
Leif-Erik Stabell	4/10/2019 - 6/25/2019	Mr. Stabell will travel to Monrovia, as a continuation and finalization of his previous trip, to assess readiness and implement mSupply as a warehouse management system (WMS). Mr. Stabell will train Ministry of Health (MoH) personnel on mSupply to ensure that the WMS can be properly utilized for commodity stock management.	60%	35%	0%	5%
Russell Raymond	5/13/2019 - 5/30/2019	Mr. Russell Raymond will travel to Monrovia, Liberia to provide urgent operations coverage during upcoming nationwide commodity distribution and leadership transition for the project in absence of the project's long-term Operations Director.	59%	19%	19%	4%
Daniel Rhodes	5/19/2019 - 6/7/2019	Mr. Daniel Rhodes will travel to Monrovia to provide leadership coverage and serve as Acting Country Director.	59%	19%	19%	4%

Scott Perkofski	5/29/2019 - 6/29/2019	Mr. Perkofski will travel to Monrovia, Liberia to take over the Acting Operations Director role from Mr. Russell Raymond and continue operations coverage during upcoming nationwide distribution and leadership transition for the project in absence of the project's long-term Operations Director who is placed on paid Administrative Leave.	59%	19%	19%	4%
Kumba Wonday	6/8/2019 - 7/12/2019	The purpose of this assignment is for Ms. Wonday to provide financial management expertise and support to field office staff during the current senior leadership transition and temporary absence of previous supervisors ensuring seamless and resilient financial oversight of program operations.	59%	19%	19%	4%
Innocent Ibegbunam	6/10/2019 - 7/5/2019	The purpose of this assignment is for Mr. Ibegbunam to serve as Senior Supply Chain Technical Advisor and provide technical leadership to the project in the implementation of program activities per the approved annual workplan. He will also lead round 12 distribution of health commodities to counties and ensure project supply chain initiatives are implemented effectively and in timely fashion.	59%	19%	19%	4%
Russell Fortier	6/16/2019 - 7/1/2019	Russell Fortier will travel to Monrovia to introduce Innocent Ibegbunam to USAID Mission in Liberia, government counterparts, project stakeholders and handover project priorities as part of Chemonics leadership transition plan. Mr. Fortier will stay for two weeks overlapping with Mr. Ibegbunam's STTA to ensure the proposed incoming Country Director is adequately oriented on various aspects of project and technical implementation.	59%	19%	19%	4%
Paul Forbes	6/24/2019 - 9/30/2019	The purpose of this assignment is for Mr. Paul Forbes to provide guidance, recommendations and best practices in effective warehouse management and oversight, freight forwarding services, and forward planning to achieve maximum efficiencies and seamless operations and facilitate on-job training and mentorship for the Central Medical Stores (CMS) Caldwell warehouse.	16%	70%	11%	4%
Innocent Ibegbunam	7/5/2019 - 7/19/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	50%	30%	0%	20%
Daniel Somah	9/8/2019 - 9/13/2019	Mr. Daniel Somah will travel to Maputo, Mozambique to present his abstract, Mid-term review of Liberia National Malaria Control Program (NMCP) Strategic Plan Social and Behavior Change Communication (SBCC) activities, 2016-2020, at the Roll Back Malaria (RBM) - Social and Behavior Change Communication (SBCC) Working Group Annual Meeting.	0%	100%	0%	0%
William I Hill	9/15/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	0%	61%	35%	5%
Patricia Quaye Freeman; Boakai Boley	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	0%	61%	35%	5%

Madagascar

Leia D'Amboise	12/2/18-12/21/18	The purpose of this scope of work was to support the closure of the GHSC-PSM Madagascar project office and plan for the financial and operational management of continued activities after December 31, 2018.	0%	44%	21%	36%
Fanjanirina Randrianarivony	3/19/19-3/30/19	Dr. Randrianarivony will take part in various workshops aimed at the validation of the LLIN distribution data, providing technical oversight of this process. She will present the results of the LLIN distribution data validation to the National Malaria Control Program (NMCP) and the USAID/PMI team in Madagascar.	0%	100%	0%	0%
Malawi						
Stewart Stremel	10/5/18-10/19/18	Mr. Stewart Stremel will travel to Lilongwe for the OpenLMIS and District Health Information System 2 (DHIS2) Interoperability STTA, to conduct an assessment and provide technical specifications and recommendations on next steps for interfacing OpenLMIS and DHIS2 in Malawi.	11%	30%	46%	13%
Neville Mabvudza	10/16/2018-10/26/2018	Chemonics' standard practice is to conduct periodic financial reviews for field projects. The main objectives are to (a) carry out an assessment of the project's accounting, finance, and operations controls to provide reasonable assurance that the project is in compliance with Chemonics' policies, procedures, guidelines, and the client's rules and regulations; (b) validate the reliability and integrity of the project's accounting, financial, and operating information; (c) verify compliance with the contract's special requirements; and (d) confirm that the project has been taking steps to comply with all applicable local governmental laws and regulations as per local counsel and/or CPA firm recommendations.	11%	30%	46%	13%
Elma Sakian	11/26/18-2/9/19	Ms. Sakian will travel to Lilongwe, Malawi to oversee GHSC-PSM operations in Malawi in the absence of a long-term operations director given that Ms. Rohrs' Operations Director assignment is coming to an end. Ms. Sakian will provide operational coverage and assistance while a long-term operations director candidate is identified and fielded. Ms. Sakian will focus primarily on ensuring that office procurements, finance, human resources, and subcontracting compliance continue uninterrupted and are ready for smooth handover to an incoming operations director.	11%	30%	46%	13%
Andrew Brown	12/09/2018-12/22/2018	The purpose of this scope of work is to provide technical support for the development of a competency framework for Supply Chain Management (SCM) staff in Malawi to ensure that SCM staff have the required competencies to perform their roles. The specific objectives are to: Map the SCM competencies and roles of existing cadres that are involved in SCM at various levels in the Malawi health sector; Conduct a rapid assessment to identify general gaps in SCM competencies among the cadres involved in SCM in Malawi, and provide short and long-term recommendations to address identified gaps with reference to existing capacity development interventions	9%	26%	51%	14%
Michael Green	12/10/18-12/23/18	Michael Green will travel to Lilongwe to provide GHSC-PSM Malawi technical support in improving the electrical components of the prefabricated storage units that were recently installed and provide feedback and recommendations on additional interventions to strengthen unit resilience against electrical damage.	60%	40%	0%	0%
Kaitlyn Roche	2/2/2019-2/9/2019	Ms. Roche will travel to Lilongwe for the Global Standards STTA, to focus on adoption and use of GS1 standards and will collaborate with the Product Registry consultant to improve the alignment between GS1 global standards as a foundation for successful implementation of a national health product registry and support broader strategic supply chain priorities of data quality, data visibility, and product traceability.	11%	30%	46%	13%
Noel Watson	02/25/2019-03/06/2019	The purpose of this scope of work is to assess the efficacy and cost efficiency of the current Malawi public health sector inventory management and distribution system to ensure constant availability of commodities across the central and facility levels, and to provide recommendations to the Ministry of Health and donors for any adjustments for improvement.	12.25%	21.57%	57.03%	9.15%
Gerhard Schneigansz	6/15/2019 - 9/27/2019	Mr. Schneigansz, System Strengthening Director (SSD) Short-Term Technical Consultant, will travel to Lilongwe to oversee all technical activities for GHSC-PSM work in Malawi. He will ensure that there are no technical gaps in implementation in accordance to the fiscal year 2019 workplan while the recruitment of a new Long-Term SSD candidate is on-going.	12%	22%	57%	9%

Irene Alenga	6/23/2019 - 6/28/2019	Irene Alenga will travel to Lilongwe to assist the GHSC-PSM project in Malawi in developing communication materials for the project's systems strengthening activities including the prefabricated storage project in Malawi.	12%	22%	57%	9%
Phillip Kamutenga	7/6/2019 - 7/16/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	9%	26%	51%	14%
Shaun O'Neil	7/15/2019 - 8/8/2019	Shaun O'Neil will serve as Acting Country Director for GHSC-PSM in Malawi. He will be responsible for providing leadership, strategic planning and management to project staff including leading the development of FY20 work plan and budget, overseeing data collection and reporting, and coordinating with stakeholders in capacity building.	12%	22%	57%	9%
Kaitlyn Roche	7/28/2019 - 8/1/2019	Kaitlyn Roche will travel to Lilongwe to support the national coordinating committee for pharmaceutical traceability by facilitating a Malawi national pharmaceutical traceability workshop to develop the collective vision, strategy and high-level roadmap for pharmaceutical traceability in Malawi.	12%	22%	57%	9%
Russell Fortier	8/3/2019 - 9/30/2019	Russell Fortier will travel to Lilongwe, Malawi to serve as Acting Country Director for GHSC-PSM in Malawi. He will be responsible for providing leadership, strategic planning and management to project staff including leading the development of FY20 work plan and budget, overseeing data collection and reporting, and coordinating with stakeholders in capacity building.	12%	22%	57%	9%
Carlos Soto	8/13/2019 - 8/31/2019	Mr. Carlos Soto will travel to Lilongwe, Malawi to oversee GHSC-PSM operations and finances in Malawi in the absence of the long-term Operations and Finance Director given that Ms. Anne Flaherty will be on leave during this time. Mr. Soto will focus primarily on ensuring the development of the project FY20 work plan budget is finalized, support the onboarding and orientation of the acting Country Director at the time of travel, and provide oversight to office procurements, finance, human resources, and subcontracting activities, including managing operation, HR and finance staff.	12%	22%	57%	9%
Nuran Mallya	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	12%	22%	57%	9%

Mali						
Jean Bedel Evi	9/28/18-10/6/18	Mr. Bedel will travel to Washington to receive his country director orientation per GHSC-PSM practice. In addition to meeting with various team members and partners, he will meet with the USAID/W backstops.	40.66%	17.66%	41.66%	0%
Noel Sylver Mondjo	2/5/19-2/23/19	The purpose of this short-term assignment is to ensure the compliance of administrative and financial components of Sub-Task Order 169 between Chemonics and PSI/Mali. This assignment will support the production of timely and quality financial reports and invoices and strengthen the team's capacity in USAID's policies and regulations. In addition, the Mr. Mondjo will work with the newly hired PSI/Mali's Country Representative to bring him up to speed on the administrative and financial aspects of the project and ensure continued implementation of best practices.	0%	100%	0%	0%

Imoite Omulepu	3/8/19-3/26/19	Mr. Omulepu will provide PMU support to the field office for ongoing operations, financial reporting and analysis, contractual compliance, and implementation of FY19 work plan activities. He will also support capacity building trainings on M&E for the upcoming EUV and assist the procurement team in submitting and tracking orders into ARTMIS.	1%	40%	11%	48%
Mahmudul Islam	3/10/19-3/24/19	GHSC-PSM will engage the services of Mahmudul Islam from SoftWorks Ltd. to work closely with GHSC-PSM Mali, DPM and Measure Evaluation team, Cellule de la Planification et de la Statistique-Ministere de la Santé de l'hygiene publique(CPS) and other relevant entities to incorporate the following activities in Bamako: I. Update OSPSANTE existing functionalities and create new ones as requested by the DPM, NMCP and National Directorate of Health (DNS) II. Update DHIS2 LMIS entry forms and fix technical issues affecting data transfer from DHIS2 to OSPSANTE in close collaboration with Measure Evaluation and CPS, whom are both leading implementation for DHIS2 in Mali III. Build capacity of PSM, DPM and CPS on managing OSPSANTE backend and interoperability between OPSANTE and DHIS2 IV. Update user-guide and technical guide	1%	40%	11%	48%
Jamie Ciesla	4/21/2019 - 4/27/2019	The purpose of this short-term assignment is for Mr. Jamie Ciesla to provide programmatic management support to the Mali PSI-PSM project.	0%	100%	0%	0%
Alain Nelissen	4/24/2019 - 4/29/2019	Mr. Nelissen will travel to Bamako to hand over the newly built Central prefabricated warehouse. He will monitor the execution of the implementation plan, hold the monthly steering committee meeting to update all stakeholders on the current status of the installation. Other activities include coordinating the training of Pharmacie Populaire du Mali (PPM) employees on the operation of materials handling equipment, fire suppression system, air conditioning system, security system generator and dock levelers and on the outstanding activities that the PPM contractor must complete, including offices, electrical installation and the snag list.	0%	40%	0%	60%
Dr. Sanoussy Kone	4/26/2019 - 5/4/2019	Dr. Kone will travel to Dar Es Salam, Tanzania to conduct a research study tour of Tanzania's Logistics Management Unit (LMU) to acquire experience and practical knowledge on how to establish an LMU in Mali.	1%	40%	11%	48%
Philippe Delamare	5/26/2019 - 6/14/2019	Mr. Delamare will travel to Bamako, Mali to assist the Pharmacie Populaire du Mali (PPM) in managing the transition to the new central warehouse and provide support for the installation of SAGE software, a warehouse management system (WMS).	0%	35%	12%	53%
Jean Bedel Evi	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	1%	40%	11%	48%
Arianna Nagle	7/15/2019 - 7/19/2019	Ms. Nagle will travel to Bamako to conduct a review of GHSC-PSM FY19 work plan implementation, attend a two-day stakeholders meeting with supply chain partners to review FY19 progress, and attend the inaugural ceremony of the prefabricated warehouse.	2%	35%	10%	53%
Adam Aiche Doumbia	8/25/2019 - 8/31/2019	Ms. Doumbia will travel to the GHSC-PSM offices in Crystal City for a series of trainings that will allow her to more effectively execute her duties as the Operations Manager for the GHSC-PSM project office in Mali. These trainings will focus on contractual requirements and Chemonics' policies and procedures to ensure that the GHSC-PSM office in Mali is operating in compliance of USAID rules and regulations.	1%	40%	11%	48%
Philippe Delamare	9/1/2019 - 9/14/2019	Mr. Delamare will travel to Bamako, Mali to provide support to Pharmacie Populaire du Mali (PPM) as they transfer supplies to the new prefabricated warehouse, transition to the new warehouse management system SAGE X3, and develop key performance indicators.	2%	35%	10%	53%
Benoît Healy	9/15/2019 - 9/21/2019	Benoît Healy will travel to Bamako, Mali to conduct the annual Finance and Compliance Review (FCR).	1%	40%	11%	48%

Mr. Yacouba Diarra; Dr. Dramane Kone; Dr. Seydou Tangara; Mr. Amadou Kamate	9/21/2019 - 9/28/2019	The purpose of this trip is to Expose high-level decision-makers to best practices, including: central warehousing; cross-docking distribution centers; sophisticated transport/distribution strategies; and cutting-edge WMIS and eLMIS. As well as to inform and support decisions in reforming supply chain systems in Mali.	1%	40%	11%	48%

Mozambique						
Rolando A. Berrios and Ishan Singhal	10/13/2018 to 10/21/2018	The objective of this assignment is to customize the TransIT tool and ePOD application to optimize fleet management in Mozambique's health commodity supply chain. The tool aggregates end-to-end data — from distribution planning through delivery to the recipient — to track performance, location, and costs as commodities move through the in-country distribution network. Through the supply of constant information, this tool will create an "instant report card," enabling distribution managers to better track shipments, make data-driven decisions, optimize distribution resources and assets, and use historical data to show trends over time.	35.88%	15.24%	28.08%	20.80%
Ahmad Rageh	11/2/18-11/17/18	Ahmad Rageh, the Chemonics Finance and Compliance Representative will travel to Maputo, Mozambique to carry out an assessment of the project's accounting, finance and operations controls, as part of the standard annual review that Chemonics undertakes for every project to ensure compliance with Chemonics and USAID regulations.	35.64%	22.76%	21.77%	19.83%
Ishan Singhal	3/29/2019 - 4/11/2019	Following the initial roll-out of the cloud based GHSC-PSM transportation tool, TransIT, and the ePOD application in October, GHSC-PSM technical program manager, Ishan Singhal will lead a TransIT training for GHSC-PSM Mozambique regional staff.	36%	15%	28%	21%
Leia D'amboise	4/16/2019 - 5/16/2019	Ms. D'Amboise will provide operational support to the Mozambique field office as project resources are diverted to support emergency relief efforts in Beira due to cyclone Idai. Additionally, given the recent departure of project operations manager, Ms. D'Amboise will serve as Acting Operations Director while the current Operations Director takes annual leave in May.	37%	23%	21%	19%
Jan de Jong	5/6/2019 - 6/13/2019	GHSC-PSM Consultant Jan de Jong will travel to Mozambique to continue providing support to emergency warehousing and distribution activities in response to ongoing Cyclone Idai relief efforts in Beira.	37%	23%	21%	19%
Jaya Chimnani	5/9/2019 - 5/26/2019	In support of USAID's Journey to Self-Reliance, Ms. Chimnani will partner with a local consultant to complete a landscape analysis of local implementing partners experienced in technical areas of supply chain management and supporting functions with the long-term objective of reducing barriers to entry into the USAID federal contracting market.	34%	23%	23%	20%
Parambir Gill; Yang Liu; Jing Zhao; Geng Yuan	5/18/2019 - 5/31/2019	Parambir Gill will travel to Maputo to oversee GHSC-PSM work in Mozambique and provide strategic and technical oversight as well as quality assurance for deliverables produced in the SIGLUS OpenLMIS source code upgrade. Yang Liu, Solution Architect, will travel to Maputo to oversee GHSC-PSM work in Mozambique as he is responsible for the solution design from the technical perspective and leading the team to produce the technical requirements documentation. Jing Zhao will travel to Maputo to oversee GHSC-PSM work in Mozambique as she is responsible for the implementation of programming languages, integrated development environments across different LMIS applications, and network frameworks for SIGLUS. Geng Yuan will travel to Maputo to oversee GHSC-PSM work in Mozambique as he responsible for the design and analysis of business requirements and resources for SIGLUS.	34%	15%	31%	19%
Natercia Macamo; Samira Ana Guina Salomão Sibindy	6/23/2019 - 7/7/2019	Ms. Macamo will travel to Accra, Ghana to participate in the 10th Annual Workshop on Surveillance, Monitoring and Evaluation (SME) of Malaria Control Programs to reaffirm and update her knowledge of the practical solutions for SME of malaria programs that are applicable and replicable in the Mozambican context.	0%	100%	0%	0%

Dimitri Peffer	7/6/2019 - 7/12/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	37%	23%	21%	19%
Asmal Gopal; Nelson Edissone Cândido Mbota	7/8/2019 - 7/12/2019	GHSC-PSM Mozambique's Provincial Support Manager, Mr. Asmal Gopal, will represent the GHSC-PSM project at the Health and Humanitarian Logistics Conference in Kigali, Rwanda. Mr. Gopal was an integral part of the GHSC-PSM response effort to Cyclone Idai and led the organization of the emergency warehouse to ensure the efficient distribution of commodities in the region. He will travel to Kigali to share best practices in warehousing and logistics in emergency response scenarios to further improve response planning. Mr. Mbota, Beira Regional Warehouse Manager for the Mozambique GHSC-PSM project, will represent CMAM at the HHL Conference in Kigali, Rwanda. Mr. Mbota's twelve years of experience in warehousing and public health issues will allow him to speak with authority on health and humanitarian logistics and improving best practices to prepare for emergency response scenarios.	37%	23%	21%	19%
Antonio Langa	8/4/2019 - 8/10/2019	Mr. Antonio Langa will travel to Nairobi, Kenya to participate in and learn from an exchange of experience with Kenyan MoH officials and GHSC-PSM in Kenya colleagues to better understand how Mozambique can continue progressing toward its journey to self-reliance. Mr. Langa will specifically learn about the success of the Global Family Planning Visibility and Analytics Network (GFPVAN) in Kenya and what will be needed in Mozambique to build capacity towards self-reliance.	32%	15%	36%	17%
Danielle Wiedeman	8/31/2019 - 10/2/2019	Danielle Wiedeman will travel to Maputo to conduct a reduction in workforce at the GHSC-PSM Mozambique field office and provide coverage for Deputy Country Director, Andres McAlister, who will be out of the office for one month on parental leave.	37%	23%	21%	19%
Neatherlands						
Samuel Oh & Kaitlyn Roche	3/25/19-3/29/19	Ms. Roche and Mr. Oh will attend the GS1 Healthcare Conference to host meetings with USAID pre-approved pharmaceutical wholesalers to discuss status against GS1 implementation requirements including the GS1 Global Data Synchronization Network (GDSN). Ms. Roche and/or Mr. Oh will also present on GHSC-PSM's master data initiatives, including lessons learned on GDSN implementation to date, with one of the USAID pre-approved wholesalers.	52.58%	34.19%	11.03%	2.2%
Niger						
Ousseini Gado	09/28/2018 to 10/07/2018	The Country Director orientation is a Chemonics project management best practice that contributes significantly to a project's long-term technical and management success—particularly in the context of GHSC-PSM, a centrally managed global project which, at its core, is designed to leverage system strengthening best practices across countries and encourage cross fertilization between the Global Supply Chain and Country Programs teams. The purpose of the Country Director orientation is two-fold: 1) to build management competencies and fluency in the resources available to support Mr. Gado and project implementation in Niger; and, 2) orient Mr. Gado to Chemonics, GHSC-PSM, the functional and operational leadership team, and USAID backstops.	0%	100%	0%	0%
Taylor Nickel	10/29/18-11/6/18	The purpose of this scope of work is to provide an assessment of the security environment of the GHSC-PSM activity in Niger and design a security platform and operational plan to mitigate against risks to project staff and operations, taking into account the appropriate economic and political context.	0%	100%	0%	0%

Alemnkia Agendia Fuotulah	11/15/18 to 12/10/18	The GHSC-PSM project in Niger has been operational since September 2018. Due to the recent resignation of the project's Finance and Operations Director, who is the sole operations and finance staff currently employed on the project, the project requires short-term surge support in the form of a short-term Acting Finance and Operations Director to ensure the continuity of operations, including the recruitment and onboarding of new staff, payment of vendors, and execution of key operational procurements.	0%	100%	0%	0%
John Stanton	02/11/2019 – 02/22/2019	John Stanton will travel to Niamey to provide technical leadership support for GHSC-PSM Niger's activities, as well as support the "common basket" model for commodity distribution together with the NMCP, ONPPC, DPH/MT and the prime recipients of the implementation of the Global Fund activities (Tuberculosis, Malaria and HIV/AIDS) and with other stakeholders. He will work with the Country Director to develop a technical strategy for the Malaria last mile distribution system in the Tahoua and Dosso regions and provide technical orientation to the new GHSC-PSM field office team.	0%	100%	0%	0%
Hamallah Sidibe	02/17/2019 – 02/23/2019	It is Chemonics' standard practice to send a Field Accounting Support Team (FAST) Manager to its project offices at key stages of operations, where the project is currently in start-up. The objective of this assignment is to support a compliant and consistent financial and operational start-up and support the new project accountant in their training. The FAST Manager will provide training in key financial areas to ensure that the accounting practices to be used in the field office, in particular cash management and internal controls, are in accordance with Chemonics' standard practices and policies as well as with USAID regulations. In addition, the FAST Manager will install the ABACUS accounting software and provide training for the functionality and utilization of the software.	0%	100%	0%	0%
Suzanne Gold	03/31/2019 – 04/10/2019	The objective of this assignment is to support in the training and use of the EUV survey. Niger will use the EUV survey to conduct its baseline assessment of facility stock levels and storage conditions in the Tahoua and Dosso regions and will need training to use the new tool, protocols, sampling strategy, and software platform. This assignment, to train project staff in Niger and data collectors, will support the project to carry out these activities and future ones, as well as continue GHSC-PSM's ability to build on the usefulness and effectiveness of the updated survey tool, protocols, and revised processes. The second objective of the assignment, time-permitting, is to provide general M&E support by reviewing current data collection, analysis, and reporting systems and processes to ensure they are in line with the M&E plan and available source documents.	0%	100%	0%	0%
Johanna Schneider	4/20/2019 - 5/7/2019	Ms. Schneider will conduct a GIS survey on the approximately 336 warehousing and health facilities in Dosso and Tahoua to gather geographic and capability data which will support route and warehousing optimization. This will also include the use of trackers to map existing road networks to all warehousing and health facilities in the two regions.	0%	100%	0%	0%
Jonathan Gatke	6/16/2019 - 6/30/2019	Jonathan Gatke will travel to Niamey, Niger to coordinate and oversee the logistics for the pre-positioning in preparation for the 2019 seasonal malaria chemoprevention campaign. Additionally, Mr. Gatke will be researching the costing information for the storage and distribution of U.S. President's Malaria Initiative-funded commodities at the central medical store.	0%	100%	0%	0%
Philippe Marien Tache	7/9/2019 - 10/14/2019	Philippe Marien Tache will travel to Niamey, Niger to provide technical support in the implementation of the FY19 work plan and organize consultative meetings with counterparts to inform the elaboration of the FY20 work plan.	0%	100%	0%	0%
John Durgavich	8/24/2019 - 9/7/2019	John Durgavich will travel to Niger to provide technical support to the Ministry of Health in their quantification of Malaria commodities and review of the country's supply plan.	0%	100%	0%	0%
Emmanuel Le Perru	8/24/2019 - 9/7/2019	Emmanuel Le Perru will travel to Niamey, Niger to provide technical and management leadership and oversight to the GHSC-PSM project in Niger and facilitate the finalization of the FY20 work plan.	0%	100%	0%	0%

Nigeria

Kehinde Otto; Fatiya Askederin; Mashood Lawal	11/28/18–12/1/19	Ladi Stephen and Mary Ameh will co-present an abstract entitled “Better Supply Chain System Design Through a Human Centered Design Approach to Improve Maternal, Newborn and Child Health (MNCH) Commodity Availability: The Experience in Nigeria.” This abstract discusses the need to reduce maternal and child mortality through improved access to and availability of MNCH commodities in three targeted states in Nigeria. The Human-Centered Design (HCD) approach is also discussed as a way to co-design, co-create and co-develop user centric solutions with end-users. Mr. Lawal wil participate as attendee of the summit.	52%	31%	13%	4%
John Stanton	12/2/18-2/7/18	Mr. John Stanton will travel to Nigeria to (1) meet senior project leadership to assess progress against the prior year’s work plan, (2) review upcoming project activities, (3) support efforts to improve communication between the project and USAID, and (4) discuss and plan with project leadership and USAID/Nigeria the pending transition of the GHSC-PSM Country Director.	52%	31%	13%	4%
Ralph Titus	12/3/18-12/14/18	Mr. Titus will travel to Abuja to deliver trainings on 3PL subcontract management and to work with local procurement staff on revising 3PL RFP processes for GHSC-PSM Nigeria.	70%	27.3%	0.7%	2%
Andrew Lewis	3/16/19-3/27/19	The GHSC-PSM Nigeria project is preparing for a transition of the country director and looking to accelerate implementation of FY19 workplan activities on the heels of the workplan’s approval. Andrew Lewis, in his capacity as PSM Nigeria PMU Director, will support the transition planning and work with the GHSC-PSM Country Director and other technical leads in consultation with USAID/Nigeria to prioritize key workplan deliverables and activities. Mr. Lewis will also support efforts to improve communication within the field team and between the project and USAID.	52%	31%	13%	4%
Kaitlyn Roche; Dana Tatnell	3/30/19-4/5/19	Phase 1: This trip will support FMoH and NAFDAC to convene a workshop planning team with GoN and GS1 stakeholders to plan and coordinate the workshop. A preliminary SWOT analysis for national traceability strategy development and implementation as well as a finalized invitation list, speakers, and agenda for the final workshop will be established. Phase 2: Ms. Tatnell will support FMoH and NAFDAC to host a 2-3-day workshop to develop the vision, strategy, and a high-level roadmap. In addition, she will develop content and materials for the sessions she will be leading during the workshop.	50%	32%	14%	4%
Kolawole Falayajo	3/26/19-3/28/19	Mr. Falayojo will participate in the GS1 Healthcare Conference to learn from world leaders about GS1 standards and their experience with implementation and discuss regulatory requirements. As Director of TQM, he will evaluate opportunities to integrate GS1 best practices into activities focused on the efficacy, potency, and quality of commodities procured by the project.	50%	32%	14%	4%
Andrew Lewis	04/28/2019 - 05/10/2019	Mr. Andrew Lewis will travel to Abuja, Nigeria from on/about April 26, 2019 – May 4, 2019 to participate and oversee the stock-taking workshop with USAID and GHSC-PSM project in Nigeria staff, provide support to the new Country Director, and support efforts to improve communication with counterparts and stakeholders.	52%	31%	13%	4%
Dana Tatnell	6/21/2019 - 6/29/2019	*Phase 1:* Ms. Roche and Mr. Tedone will organize a workshop to engage with the Federal Govt. of Nigeria (GoN) to develop a vision and strategy for traceability and define a near-term roadmap on actions required to set the enabling environment for standards implementation. This trip will support the Federal Ministry of Health (FMoH) and the National Agency for Food and Drug Administration and Control (NAFDAC) to convene a workshop planning team with GoN and GS1 stakeholders to plan and coordinate the workshop. A preliminary SWOT analysis for national traceability strategy development and implementation as well as a finalized invitation list, speakers, and agenda for the final workshop will be established. *Phase 2:* Ms. Roche will support FMoH and NAFDAC to host a 2-3-day workshop to develop the vision, strategy, and a high-level roadmap. In addition, Ms. Roche will develop content and materials for the sessions she will be leading during the workshop.	50%	32%	14%	4%

Jay Heavner	06/21/2019 - 07/05/2019	Jay Heavner will travel to Abuja to work with the Knowledge Management and Communication (KMC) team and other technical staff to develop a robust project communication strategy; audit KMC activities and products; and develop some key knowledge products for the GHSC-PSM including success products, case studies, and abstracts.	52%	31%	13%	4%
Michael Egboh	7/6/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	52%	31%	13%	4%
Kolawole Falayajo	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	50%	32%	14%	4%
Andrew Lewis; Angelina Njoku	9/21/2019 - 10/4/2019	Andrew Lewis will travel to Abuja to manage the finalization of the GHSC-PSM Nigeria FY20 work plan. As the Nigeria PMU Director, Mr. Lewis is responsible for designing and aligning technical strategies and implementation approaches. He is also responsible for operational, financial management and quality assurance assistance. He will work closely with the field office staff, USAID, and other stakeholders in strategy sessions to identify, design, and evaluate targeted activities. This includes ensuring FY20 project resources align to the substantial funding cuts expected across the program and to program priorities outlined in the MOP and various OGAC and OHA workplans. He will also support strategic joint planning to leverage the shared resources of USAID and the Global Fund's supply chain operations.	65%	5%	5%	25%

Rwanda						
Ed Vreeke & Fatima Suleman	11/16/18-12/1/18	Mr. Vreeke and Ms. Suleman will travel to Kigali to meet with Rwanda Ministry of Health and GHSC-PSM Rwanda staff to begin developing pharmaceutical pricing policy proposal by first understanding the current pharmaceutical pricing landscape.	36%	32%	15%	17%
Oumer Andualem	11/17/18-12/8/18	The purpose of this activity is to equip the CPDS quantification committee with quantification principles, methodologies and tools used for forecasting and supply planning of antiretrovirals, laboratory, malaria, contraceptives, maternal and child health, and Tuberculosis (TB) commodities. Quantification expert, Mr. Oumer, will first build the capacity of 15 trainers who will then support him to train all quantification committee members over a two-week period.	36%	32%	15%	17%
Max Kabalisa; Muzayire, Celsa	11/26/18-12/1/18	The purpose of this scope of work is to attend the GHSC Summit, which aims to bring together people, products, and processes to maximize the impact of global health supply chains. The participants will gather experience and lessons learned from recent global supply chain best practices for adaptation, as applicable. The one PSM Rwanda staff member, one MOH Staff, and one MPPD staff member will be able to collaborate on future activities including the pending optimization process of the conversion of MPPD into RMS Ltd. for the government of Rwanda.	36%	32%	15%	17%
Ed Vreek; Fatima Suleman	3/10/19-3/22/19	Mr. Ed Vreeke will travel to Kigali, Rwanda to collect more pricing, consumption and import data to underwrite the various pharmaceutical pricing policies and to facilitate the workshop with stakeholders (consensus building) on drafting pharmaceutical pricing policy document based on their feedback. Ms. Fatima Suleman will travel to Kigali-Rwanda to facilitate a workshop with stakeholders (consensus building) on draft pharmaceutical pricing policy document, based on their feedback.	54%	8%	26%	12%

Parambir Gill; Swaroop Jayaprakash	3/23/19-4/7/19	Mr. Parambir S. Gill will travel to Rwanda to work with the Ministry of Health, USAID, Medical Procurement and Production Division (MPPD), the field office and other stakeholders on several MIS initiatives including Rwanda Public Health Supply Chain Information System Roadmap, National Product Registry and Rwanda Public Health Data platform. Mr. Swaroop Jayaprakash will also travel to Rwanda to work with the Ministry of Health, USAID, MPPD, the field office and other stakeholders on several MIS initiatives including Rwanda PH Supply Chain Information System Roadmap, National Product Registry and Rwanda Public Health Data platform.	54%	8%	26%	12%
Kaitlyn Roche	5/18/2019 - 5/26/2019	Ms. Roche, Manager for Global Standards & Traceability will travel to Rwanda to work with Field Office and Mr. Agoro, Traceability Technical Advisor to support the global standards and pharmaceutical traceability implementation in Rwanda in collaboration with the Ministry of Health and the Rwanda Food & Drug Authority.	54%	8%	26%	12%
Collins Agoro	5/18/2019 - 6/1/2019	Mr. Agoro will travel to Kigali, Rwanda to transition into his new role to support the GHSC-PSM Rwanda field office in implementing their FY19 GS1 and traceability activities	54%	8%	26%	12%
Marilyn Kimeu; Dolly Michira	5/19/2019 - 7/12/2019	Ms. Kimeu will travel to Kigali, Rwanda to 1) lead the team and ensure the organization of project by managing various streams of work; 2) attend meetings and manage relationships with stakeholders on the ground to adapt and deepen on going analysis; 3) host meetings and present team work to stakeholders. Ms. Michira will travel to Kigali, Rwanda to 1) develop the deliverables including the implementation plan, leveraging a mix of interviews, data collection and literature review; 2) organize workshops for stakeholder input and feedback.	54%	8%	26%	12%
Safae Ettahiri	5/26/2019 - 7/6/2019	Ms. Ettahiri will travel to Kigali, Rwanda to lead the team and ensure the organization of project by managing various streams of work, attend meetings and manage relationships with stakeholders on the ground to adapt and deepen on going analysis, and host meetings and present team work to stakeholders.	54%	8%	26%	12%
Stefania Slabyj	6/14/2019 - 6/22/2019	Ms. Slabyj will conduct a strategic leadership visit to Rwanda to review TA and Distribution implementation progress to date, identify areas for refinement and lessons learned, review technical project activities, and set the vision for future initiatives in alignment with GHSC-PSM objectives and USAID Mission priorities.	54%	8%	26%	12%
Charles Karangwa; Antoine Gakunzi; Joseph Kabatende; Alex Gisagara	6/16/2019 - 6/22/2019	Mr. Karangwa will travel to Accra, Ghana to learn from the Ghana Food and Drug Authority (FDA) on strengthening of pharmaceutical regulatory functions. Mr. Karangwa will engage other FDA counterparts to learn about the overall management of the authority including strategic and business plan, monitoring and evaluation, and performance management framework. Mr. Gakunzi will travel to Accra, Ghana to learn from the Ghana Food and Drug Authority (FDA) on strengthening of pharmaceutical regulatory functions. Mr. Gakunzi will engage other FDA counterparts to learn about the laboratory services department, including the testing processes in drug physicochemical, food physicochemical, pharmaceutical microbiology, food microbiology, cosmetic/household chemical substances, medical devices in accordance with international standards. Mr. Kabatende will travel to Accra, Ghana learn from the Ghana Food and Drug Authority (FDA) on strengthening of pharmaceutical regulatory functions. Mr. Kabatende will engage other FDA counterparts to learn about medicine, devices, vaccines, cosmetic, household chemicals and food assessment and registration. Mr. Gisagara will travel to Accra, Ghana to learn from the Ghana Food and Drug Authority (FDA) on strengthening of pharmaceutical regulatory functions. Mr. Gisagara will engage other FDA counterparts to learn about the food and drugs import export control, inspection and compliance, market surveillance, inspection, licensing, and vigilance.	54%	8%	26%	12%
Ralph Titus; Steven Thomas	6/17/2019 - 6/30/2019	Mr. Titus will travel to Kigali to conduct a national supply chain costing study in Rwanda. Mr. Titus will also train the Medical Procurement and Production Division (MPPD) on the use of tools to continuously track its supply chain cost. Mr. Thomas will travel to Kigali, as part of a team of two, to conduct a national supply chain costing study in Rwanda. Mr. Thomas will also train MPPD on the use of tools to continuously track its supply chain costs.	54%	8%	26%	12%

Benoît Healy	6/22/2019 - 7/10/2019	Mr. Healy will travel to Kigali, Rwanda to review financial and operational files and procedures to ensure compliance with GHSC-PSM IDIQ contract requirements, Task Order requirements, U.S.government rules and regulations, and Chemonics' procedures and policies.	54%	8%	26%	12%
Ines Buki	7/8/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	54%	8%	26%	12%
Felix Nzabandora; Edouard Munyangaju; Vincent Sabagirirwa;	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	54%	8%	26%	12%
Sierra Leone						
Juan Valladares	3/25/19-4/7/19	The purpose of this activity is to conduct a review of the LMIS systems in country to identify current data flow and data integration processes that include malaria commodities. Data gathered during the review will be used to guide enhancements on malaria specific reports and key performance indicators from the existing data aggregation databases and dashboards. Review on the data integration process will also focus on identifying gaps in standard operating procedures and LMIS and eLMIS. Recommendations for report and key performance indicators will be disseminated with key stakeholders.	0%	100%	0%	0%
Nassima Belkadi	3/24/2019 - 4/18/2019; 4/28/2019 - 5/24/2019	The purpose of this trip was to attend the GHSA kickoff meeting and launch the GHSA activity in Sierra Leone by introducing the Emergency Supply Chain Framework and Playbook to Core Team members and providing necessary coaching.	0%	100%	0%	0%
Juan Valladares	3/25/2019 - 4/7/2019	Mr. Juan Valladares will conduct a Logistics Management and Information System (LMIS) systems review in country to identify current data flow and data integration process that include Malaria commodities.	0%	100%	0%	0%
Amina Kandil	4/4/2019 - 4/7/2019	The purpose of this trip was to attend GHSA Kickoff meeting to identify Emergency Supply Chain (ESC) Core Team leadership and introduced the three modules of the ESC Customized Playbook.	0%	100%	0%	0%
Victoria Siebert	5/5/2019 - 5/24/2019	The purpose of this trip was to provide additional technical assistance to coordinate information gathering and ESC stakeholders' trainings.	0%	100%	0%	0%
Kate Gulitashvili	6/1/2019 - 6/14/2019	Ms. Gulitashvili will travel to Sierra Leone to provide technical and management support as the Resident Malaria Advisor prepares for Maternity Leave. During her trip, Ms. Gulitashvili will also attend the GHSA simulation exercise and activity closeout.	0%	100%	0%	0%
Juan Valladares	7/31/2019-8/11/2019	Mr. Juan Valladares will provide training on forecasting and supply planning tools to Malaria TWG, as well as provide support to the NMCP in the annual quantification exercise of malaria commodities.	0%	100%	0%	0%
Nadja Moore	8/8/2019 - 8/16/2019	Ms. Moore will travel to Sierra Leone to provide operational support to the GHSC-PSM in Sierra Leone field office and work with the team to prepare the FY2020 workplan narrative and budget. Ms. Moore will provide support and refresher training to staff on financial and operational compliance procedures.	0%	100%	0%	0%
South Africa						

Ramesh Rajeswaran & Jawahar Kandasamy	10/25/18-10/31/18	Ramesh Rajeswaran and Jawahar Kandasamy – Mr. Rajeswaran and Mr. Kandasamy visit PSM recompeted warehousing services in South Africa and identified a new vendor to execute operations. PSM is winding down operations in the old warehouse (operated by IHS) and is in the process of transferring stock to the new warehouse (operated by DSV) as well as ensuring that all scheduled outbound orders leave the IHS warehouse by October 31st. The transition of operations from IHS to DSV is expected to generate savings of about $1 million annually.	83%	10%	7%	0%
South Sudan						
John Stanton	5/18/2019 - 5/29/2019	Mr. Stanton will travel from Washington, D.C. to Juba, South Sudan to oversee the Call Center Consultant and provide managerial support to the Integrated Call Center (ICC) activity. In addition, he will provide program management and technical assistance to the field office in anticipation of two Task Order closeouts, as well as provide onboarding assistance for the new short-term Deputy Country Director	34%	32%	34%	0%
David Andreu	5/18/2019 - 6/1/2019	Mr. Andreu will travel from Palma de Mallorca, Spain to Juba, South Sudan to provide technical assistance for the Integrated Call Center (ICC) activity. He will ensure that the call center equipment is correctly calibrated to South Sudan's bandwidth specifications and that all technical software is accurately set up. In addition, he will be updating the ICC infrastructure and ensuring full working capacity of the database and its applications.	34%	32%	34%	0%
Saul Kidde	7/7/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	34%	32%	34%	0%
Danielle Wiedeman	8/18/2019 - 8/31/2019	Ms. Wiedeman will travel to Juba, South Sudan to provide program management and technical assistance to the field office during a period of transition after the Country Director's resignation from the project and the Deputy Country Director's personal leave. Ms. Wiedeman will also provide leadership support in advance of two anticipated task order close-outs and facilitate the continuation of critical operations and technical activities outlined in the FY19 work plan.	34%	32%	34%	0%
Tanzania						
Rachel Vas	11/8/18-11/20/18	The purpose of this STTA is to align the GHSC-PSM procurement and delivery strategy for Tanzania with country requirements and meet with key Ministry of Health stakeholders in country to address recent challenges with product delivery, review local GHSC-PSM staff performance, validate current GHSC-PSM and GHSC-TA-TZ project responsibilities, as well as meet with implementing partners that GHSC-PSM procures and delivers on their behalf.	65%	25%	10%	0%
Rebecca Logan	11/11/18-11/17/18	The purpose of this STTA is to align the GHSC-PSM procurement and delivery strategy for Tanzania with country requirements and meet with key Ministry of Health stakeholders in country to address recent challenges with product delivery, review local GHSC-PSM staff performance, validate current GHSC-PSM and GHSC-TA-TZ project responsibilities, as well as meet with implementing partners that GHSC-PSM procures and delivers on their behalf.	65%	25%	10%	0%
Rachel Vas	6/15/2019 - 8/16/2019	Ms. Rachel Vas will travel to Dar es Salaam to meet with key in-country counterparts on procurement related matters to create efficiencies that foster the projects overall procurement and logistics efforts in Tanzania. She will also onboard new GHSC-PSM project team members, as well as facilitate rapid and smooth administrative and operational set of the GHSC-PSM footprint.	65%	25%	10%	0%
Thailand and Laos						

Nathalie Albrow	01/4/19-01/19/19	Nathalie Albrow will travel to Bangkok, Thailand to review technical project activities, administer an orientation to project staff, elaborate work flows and roles/responsibilities and assist with operationalization of FY19 technical work plan activities to align with GHSC-PSM objectives and USAID Mission priorities.	0%	100%	0%	0%
Tyler Smith	4/27/2019 - 5/10/2019	Mr. Smith, GHSC-PSM LMIS Specialist will travel to Thailand to conduct a Logistics Management Information System (LMIS) assessment for malaria commodities.	0%	100%	0%	0%
Nathalie Albrow	6/19/2019 - 6/21/2019	Nathalie Albrow will travel to Bangkok, Thailand to review technical project activities, administer an overview orientation to the newly hired GHSC-PSM project staff, and discuss upcoming activities in preparation for FY20 work planning.	0%	100%	0%	0%
John Battaile	9/5/2019 - 9/20/2019	Mr. Battaile will travel to Bangkok, Thailand to support the field office's accounting system start up for GHSC-PSM in Thailand. He will then travel to Phnom Penh, Cambodia to train the Finance Officer in Cambodia. Our Finance Officer in Cambodia will be providing remote accounting support for our project in Thailand.	25%	75%	0%	0%
Uganda						
Reginald Baddoo	12/5/18-12/6/18	Mr. Reginald Baddoo will travel to Kampala, Uganda to participate in National Supply Chain 2.0 (NSCA2.0) workshop being conducted by the Uganda Ministry of Health to understand processes, challenges and best practices.	34%	32%	31%	3%
Dr. Hua Ni	4/29/2019 - 5/3/2019	Dr. Ni will travel to Kampala to attend the ICT4D Conference during April 30-May 2, 2019. While in country for conference attendance, Dr. Ni will also visit the GHSC-PSM Uganda project office to discuss the options for inventory dashboard analysis as well as review the quality and consistency of data need for optimization exercise at NMS	69%	14%	17%	0%
Khalid Mohammed Abdul	7/7/2019 - 7/17/2019	Dr. Mohammed will travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities. Dr. Mohammad will stay additional days to participate in home-office meetings and trainings. He will engage with Washington-based leadership to discuss program priorities.	69%	14%	17%	0%
Dana Tatnell	7/13/2019 - 7/26/2019	Ms. Tatnell, Global Standards Analyst, will travel to Uganda to support the barcode implementation activity at the Joint Medical Stores. During her visit, she will review the availability of GS1 standards and draft technical specifications for required systems and technologies.	69%	14%	17%	0%
Steven Thomas	7/15/2019 - 7/26/2019	Mr. Thomas will travel to Kampala, as part of a team of two to continue with Phase II of the Activity Based Costing (ABC) at the Joint Medical Stores (JMS). During Phase II, the team will customize the ABC tools and train JMS staff to capture, analyze and use the information for decision making.	69%	14%	17%	0%
Stefania Slabyj	8/3/2019 - 8/11/2019	Ms. Slabyj will conduct a strategic leadership visit to Uganda to review overall project implementation progress to date, identify areas for refinement and lessons learned, review technical project activities, support FY20 work planning and set the vision for future initiatives in alignment with GHSC-PSM objectives and USAID Mission priorities.	69%	14%	17%	0%
USA						
Geert Geerligs	9/30/18-10/12/18	Geert Geerligs will travel to Crystal City to perform his tasks as acting QA Team Manager at headquarters. The objective of this assignment is to perform the QA Manager task at headquarters, to ensure close cooperation with GHSC-QA, USAID, the TO2 QA Team, Procurement, D/R, QMU, and other PSM teams.	79%	10%	7%	4%

Leanne Ruitenbeek	10/21/18-11/1/18	Under Task Order 2 – Malaria, GHSC-PSM is responsible for quality assurance and quality control of commodities purchased. This is executed by staff from consortium partner SGS, with staff located at both the GHSC-PSM HQ office in Crystal City Virginia and at the SGS office in the Netherlands. Leanne Ruitenbeek supports Brigitte Heiden as Acting TO2 QA/QC Manager until a permanent candidate is found. The objective of this assignment is to perform the TO2 QA/QC Manager task from headquarters, enabling to more closely cooperate with the headquarters TO2 QA Team, Procurement, D/R, QMU, and other GHSC-PSM teams.	0%	100%	0%	0%
Geert Geerligs	11/11/18-11/21/18	The objective of this assignment is to train the new QA Manager on his tasks and facilitate a smooth transition. Geert will provide training on the GHSC – PSM project, the role of GHSC-PSM QA, the role of GHSC – QA, and the role of the various GHSC- PSM teams, including the TO2 QA Team, Procurement, Deliver and /Return, Quality Management Unit, and other GHSC-PSM teams. He will introduce him to all relevant staff, clarify the status of topics such as the Activity Matrix, ongoing incidents, procedures and work instructions that are in progress, etc.	79%	10%	7%	4%

Zambia						
Peter Okebukola; Tony Lee; Michael Fleming; Nikhil George; Irfan Mahmud	9/15/18-11/11/18	Mr. Okebukola, Mr. Lee, Mr. Fleming, Mr. George, and Mr. Mahmud will travel to Lusaka, Zambia to (1) conduct a needs assessment of the National Supply Chain Strategy (NSCS), (2) develop a draft NSCS in coordination with USG, MOH and other implementing partners, and (3) design the governance and performance management infrastructure to ensure successful implementation of new NSCS.	63%	19%	18%	0%
Tara MacKinnon	11/1/18-11/16/18	Ms. Tara MacKinnon will travel to Lusaka to review the project's financial and operational procedures and their compliance to the client's rules and regulations as well as Chemonics' policies and procedures. She will work with the field office to ensure accurate tracking of task order funding, expenditure, and reporting.	71.5%	7%	18%	3.5%
Hua Ni	12/1/18-12/5/18	Mr. Hua Ni will attend at the Global Health Supply Chain Summit 2018 to conduct a presentation on "Optimizing the USAID Global Health Supply Chain Network: A Journey toward Supply Chain Transformation" He will then stay in-country for an additional 3 days to support technical assistance, discuss, and report on the interim finding of the simulation analysis of inventory movements and transportation allocations.	Summit funding 79%; Extension funding 70.5%	Summit funding 10%; Extension funding 8%	Summit funding 7%; Extension funding 18%	Summit funding 4%; Extension funding 3.5%
Andrew Brown	3/25/19-4/5/19	Mr. Andrew Brown will travel to Lusaka, Zambia to provide technical support for an assessment of supply chain management performance gaps among health personnel involved in commodity management at provincial, district and SDP levels	70.5%	8%	18%	3.5%
Kaitlyn Roche	5/10/2019 - 5/19/2019	Ms. Roche will travel to Lusaka, Zambia to raise awareness among stakeholder groups and solicit buy-in for the establishment of a national coordinating committee for pharmaceutical traceability. She will also be conducting Activity Phase 1: Advocacy and Awareness.	71%	8%	18%	4%
Dion de Gruchy	5/13/2019 - 7/30/2019	The purpose of this scope of work is two-fold: First, to provide hands-on technical support and trouble-shooting to Medical Stores Limited (MSL) for short-term improvements to operationalize the regional distribution centers (RDC) sand second to provide high-level strategic planning for future activities in the form of a roadmap operationalize the RDCs.	71%	8%	18%	4%
Simon Pennelegion; Simon James Chew	6/10/2019 - 6/15/2019	The purpose of Mr. Pennelegion and Mr. Chew's trip is to provide MACS-specific technical assistance to GHSC-PSM Zambia. Under the management of the GHSC-PSM field team, the MACS team will conduct a current-state assessment of MACS software and hardware. The MACS team will also develop a costed, time-bound proposal for future interventions to roll-out MACS in the regional hubs. Lastly, at the direction of GHSC-PSM, the team will address any issues or opportunities for improved functionality that can be addressed during the in-country portion of the STTA.	71%	8%	18%	4%

Jean Marc Vander Stichelen	7/7/2019 - 7/18/2019	Jean-Marc Vander Stichelen will travel to Crystal City, VA to participate in the second bi-annual Country Directors Meeting. The weeklong Country Directors Meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams for strategic visioning sessions around the three GHSC-PSM objectives (1. Improve availability of health commodities; 2. Strengthen in-country supply chains; and 3. Increase effective global collaboration to improve long-term availability of health commodities). It will also be to prepare for the FY20 work planning process, encourage interactions with USAID Washington Backstops on priorities for FY20, and provide opportunities to connect with and learn from headquarters colleagues. Immediately following this Meeting, Jean-Marc will participate in technical, operational, and strategic sessions and introductions with HQ counterparts, which includes meetings with the Managing Director, GHSC-PSM leadership, and the Zambia Project Management Unit in the Crystal City office.	71%	8%	18%	4%
Robert Ginsberg	7/7/2019 - 7/21/2019	To provide technical assistance in developing PowerBI dashboards and tools to more effectively use available data to identify supply chain needs and assist in forecasting.	71%	8%	18%	4%
Allan Rotman	7/14/2019 - 8/16/2019	Mr. Allan Rotman will travel to Lusaka, Zambia, to provide technical assistance on assessing the feasibility of setting up and operating a drug basket account for Ministry of Health (MOH). The outcome expected is a decision of whether or not to pursue the basket fund approach. If a positive determination is made, Mr. Rotman will prepare a roadmap on the way forward that includes terms of reference for a drug basket core group that would continue to work on this initiative.	71%	8%	18%	4%
Kaitlyn Roche	7/20/2019 - 7/27/2019	Ms. Roche will travel to Lusaka, Zambia to support the national coordinating committee for pharmaceutical traceability by facilitating a Zambia national pharmaceutical traceability workshop to develop the collective vision, strategy and high-level roadmap for pharmaceutical traceability in Zambia.	71%	8%	18%	4%
Rachel Smith	7/21/2019 - 7/27/2019	Ms. Tatnell will travel to Lusaka, Zambia to support the national coordinating committee for pharmaceutical traceability by facilitating a Zambia national pharmaceutical traceability workshop to develop the collective vision, strategy and high-level roadmap for pharmaceutical traceability in Zambia. She will also be conducting Activity Phase 2: National Vision & Strategy Workshop.	71%	8%	18%	4%
Barry Chovitz	8/5/2019 - 8/16/2019	Barry Chovitz will travel to Zambia to develop a road map to integrate the four logistics systems currently in use by the Zambian MOH to improve supply chain efficiency among the following four logistics systems: ARV Logistics System (ARV LS), HIV Test Kits Logistics System (HTKLS), Essential Medicines Logistics Improvement Program (EMLIP), and the National Laboratory Logistics System (NLLS). He will also work with the Zambia leadership team to review activities in fiscal year 2019 in preparation for development of the work plan for fiscal year 2020.	71%	8%	18%	4%
Derrick Nyimbili; Samson Phiri; Illitongo Saasa Sondashi; Abel Livingi; Dr. Zuma Munkombwe	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	71%	8%	18%	4%

Zimbabwe						
Sachin Jagtap	5/18/2019 - 5/26/2019	Sachin Jagtap will travel to Harare to redesign the community health worker reporting and resupply system.	0%	100%	0%	0%

Caroline Mashingaidze	7/7/2019 - 7/13/2019	The purpose of this trip is to travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. The weeklong meeting will be a state of the art (SOTA) technical conference to engage the Country Directors in knowledge sharing across task orders and global programs. The Country Directors will meet with GHSC-PSM headquarters teams, USAID Washington backstops, and colleagues for strategic visioning sessions around GHSC-PSM objectives, and preparation for the FY20 work planning process and priorities.	85%	15%	0%	0%
Chester Marufu; Zealous Nyabadza; Ropafadzai Hove	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	85%	15%	0%	0%

HQ						
Brigitte Heiden	4/1/2019 - 4/13/2019	Brigitte Heiden will travel to Crystal City in her capacity as Acting TO2 Quality Assurance/Quality Control (QA/QC) Manager to train and handover tasks to the new TO2 QA/QC Manager, Mattu Bockarie-Davis, who will start on March 25, 2019.	0%	100%	0%	0%
Michael J. Smith	4/2/2019 - 4/14/2019	The purpose of this trip is to coordinate the USAID Introduction to Supply Chain Management & Commodity Security for Health Commodities course to USAID staff at the training center in Pretoria, which takes place from Monday, April 8th to Friday, April 12th. Mr. Smith will depart a day earlier than Dr. Brown and Mr. Chovitz in order to complete arrangements with the training center staff on Friday, April 5th in advance of the start of the course on Monday, April 8th.	30%	30%	30%	10%
Barry Chovitz	4/5/2019 - 4/14/2019	The purpose of this trip is to facilitate the USAID Introduction to Supply Chain Management & Commodity Security for Health Commodities course to USAID staff at the training center in Pretoria, which takes place from Monday, April 8th to Friday, April 12th.	30%	30%	30%	10%
Andrew Brown	4/6/2019 - 4/14/2019	The purpose of this trip is to facilitate the USAID Introduction to Supply Chain Management & Commodity Security for Health Commodities course to USAID staff at the training center in Pretoria, which takes place from Monday, April 8th to Friday, April 12th.	30%	30%	30%	10%
Ashley Greve	4/29/2019 - 5/3/2019	Ms. Greve will attend the ICT4D Conference in Uganda as a co-presenter on warehousing and distribution activities, including Internet of Things (IoT) sensor use and data collection, Unmanned Aerial Vehicles (UAVs) for cargo carrying, and the Transportation Information Tool (TransIT) to showcase USAID's warehousing and distribution successes through the GHSC-PSM project.	57%	31%	10%	2%
Colleen Karoliszyn; Sarah Khederian	5/28/2019 - 6/19/2019	Colleen Karoliszyn and Sarah Khederian will travel to Uganda, China and India to onboard new and old suppliers onto the new IDIQ vehicle (which differs significantly from the old vehicle), align goals and expectations, and better understand vendor operations and constraints. This is particularly critical for suppliers with which GHSC-PSM will enter into VMI arrangements, as the particulars of those operations will have to be well understood and carefully managed.	0%	100%	0%	0%
Collins Agoro	7/8/2019 - 7/19/2019	Collins Agoro will travel to Crystal City, VA to participate in the second bi-annual Country Directors' Meeting. Mr. Agoro will co-facilitate a technical session during the weeklong Country Directors' Meeting technical conference to engage the Country Directors in GS1's traceability global technical approach and what it takes to implement, using Rwanda traceability activity as an example. Mr. Agoro will also attend a team retreat and visioning workshop to prepare for the FY20 work planning process for the GS1 technical activities, participate in discussions with USAID Washington backstops on priorities for the coming year, and connect with and learn from headquarters colleagues.	57%	31%	10%	2%

Brigitte Heiden	7/14/2019 - 7/20/2019	Brigitte Heiden, TO2 QC Liaison Officer, will continue coaching Mattu Bockarie-Davis, TO2 QA/QC Manager, and also participate in the GHSC-PSM PMI Malaria meeting on July 18, 2019.	0%	100%	0%	0%
Ambika Raghavan	7/20/2019 - 7/25/2019	Ambika Raghavanwill travel to Johannesburg, South Africato visit GHSC-PSM's Regional Distribution Center(RDC). During this visit Ms. Raghavanwill review the adequacy of the processes and systems in place, identify areas of improvement, and analyze the procedures needed to importproducts into Mozambique.	78%	18%	4%	0%
Sara Ma	7/20/2019 - 7/25/2019	Sara Mawill travel to Johannesburg, South Africato visit GHSC-PSM's Regional Distribution Center (RDC). During this visit Ms. Ma will review the adequacy of the processes and systems in place, identify areas of improvement, and analyze the procedures needed to importproducts into Mozambique.	96%	0%	4%	0%
Ryan Triche	7/27/2019 - 8/14/2019	Mr. Triche will provide logistical, operational, and management support for the GHSC-PSM Unmanned Aerial Vehicle (UAV, or drone) activity in Malawi. During this time, the team anticipates steady state flight operations between the initial two ground control stations at Nkhata Bay District Hospital and St. Peter's Hospital on Likoma Island. Mr. Triche will also keep USAID/Washington and local stakeholders apprised of activity progress and any adjustments to the activity plan.	57%	31%	10%	2%
David DiSilvestro; Poonam Ramakrishna; Nicole Sherman; Walid Irshad	9/7/2019 - 9/14/2019	Business Analyst, David DiSilvestro Business Analyst, Nicole Sherman, Business Analyst, Poonam Ramakrishna, and Data/Application Architect, will travel to Bangalore, Indiato oversee GHSC-PSM work in the MIS office located there. The focus of the trip is to ensure that MIS staff are meeting requirements, and to identify new areas of improvement, and mark progress since the transition to the IBM India team that took place at the beginning of FY19.	57%	31%	10%	2%
Ralph Titus	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	57%	31%	10%	2%
Kaitlyn Roche; Sean Lockhead; Violet Ketani; Collins Obiero Agoro;	9/16/2019 - 9/20/2019	The objective of this assignment is for attendees to participate in the 2nd Annual African GS1 Healthcare Conference. Building on the momentum from last year's conference in Ethiopia, this event will include presentations from healthcare leaders from the private industry, governmental bodies, healthcare providers, and aid organizations on the progress of worldwide efforts to implement global standards to ensure visibility and security in medicine supply chains. The objective of this workshop will be to hear from teams and field offices across the project on the global standards work they have done in the past year as well as their plans and goals for the coming year.	53%	34%	11%	2%
Naizgi Haile	9/23/2019 - 9/27/2019	Naizgi Haile will travel to GHSC-PSM's regional distribution center (RDC) located in Johannesburg, South Africa to observe the annual physical inventory count and reconcile the physical inventory count with the inventory report, as contractually required. He will also review the processes for inbound and outbound shipments, order receipt and generation of documents and report the findings to Jawahar Kandasamy, RDC Manager.	78%	18%	4%	0%
Matthew Rando; Mattu Bockarie-Davis	9/22/2019 - 9/28/2019	Matthew Rando will travel to Singapore to attend a Long Lasting Insecticide-Treated Net (LLIN) supplier summit hosted by The Global Fund. The primary topics addressed will be GHSC-PSM's sourcing strategy and future approach to quality assurance in the LLIN market. Mattu Bockarie-Davis will travel to Singapore to attend an LLIN supplier summit hosted by The Global Fund. The primary topics addressed will be GHSC-PSM's sourcing strategy and future approach to quality assurance in the LLIN market.	0%	100%	0%	0%

Annex B. EUV Summary

	Angola	Burkina Faso	Burundi	Cameroon	Ethiopia	Ghana	Liberia	Mali	Mozambique	Nigeria	Niger	Zambia	Zimbabwe
Date of the last EUV survey in FY19	Jun-19	Sep-19	May-19	Sep-19	Aug-19	Sep-19	Mar-19	Sep-19	Aug-19	Aug-19	Apr-19	Aug-19	May-19
Number of surveys completed in FY 2019	**2**	**2**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**4**	**2**
Total Number of surveys completed since August 2016	**5**	**9**	**3**	**3**	**5**	**8**	**2**	**3**	**11**	**6**	**1**	**11**	**9**
Survey Frequency	Semi-annual	Semi-annual	Annual	Semi-annual	Semi-annual	Semi-annual	Three times per year	Semi-annual	Quarterly, at the discretion of the Govt. of Mozambique	Semi-annual	Annual	Quarterly	Semi-annual
Facility information	2,888 health facilities and 184 warehouses (18 provincial and 166 municipal)	2,337	1,348 (1192 health centers and 108 hospitals) and 48 district warehouses	6,228 health facilities in country and two PMI supported regions have 750 health facilities with 300 in the North Region, and 450 in Far North Region	3,016 hospitals and health centers and 12,000 health posts	Approximately 5,000 facilities	831 facilities (732 clinics, 62 health centers, and 37 hospitals). These facilities include public, private, and faith based.	Public sector: 1 CMS, 8 Regional warehouses (PPMR), 5 Hospitals third references, 8 Hospitals second references, 62- health districts (District hospital including district warehouses), around 1,366- CSCom (health centers at community level)	1,596 facilities in the country plus 11 provincial warehouses and 147 district warehouses	3,666 across 11 PMI-focused states	311 health facilities in Dosso and Tahoua, the two regions in which PSM/Niger operates	Total 2400 facilities across the whole country	1,684
Methodology	Multi-level sampling based on malaria prevalence and delay in submitting malaria reports. It was defined 95% CL and 5% MoE. Using NMCP database, 10 provinces are selected; 3 municipalities per province are selected; 23 health facilities are selected per province, including the provincial depot in each province and the municipal depot in each selected municipality. EUV is carried out by GHSC-PSM staff with MoH officials at national, provincial and municipal levels.	Multi- level stratified random sampling (by region, district, and facility type); all 13 regions are covered in each round. Systematic random sampling is used to select the peripheral health units. When a health facility is selected, the corresponding depot dispatcher of Districts (DRD) and the CAMEG regional agency will be selected too.	Burundi NMCP through the steering committee coordinate the implementation of EUV. Multi-level stratified samples of 88 sites were randomly selected: At central level National medical store CAMEBU and PSI warehouse were automatically included,12 district warehouses, 12 hospital warehouses and 62 health centers. Data were collected using three questionnaires: the first one was for supply chain indicators ,the second for malaria case management indicators and the last one was the community level (CHWs).	Multiple level stratified random sampling in 8 of the 10 regions.	The sample is stratified by region (9 regions and 1 city administration) and facility type (hospitals, and health centers).	Multi-level stratified sampling. Two districts are randomly selected within each region. In each district, a district hospital is included. Selection of clinics and CHP level facilities are weighted by the proportion of each of these facilities within a selected district. Approximately 100 facilities are selected twice a year.	Multiple level stratified random sampling. There are 15 counties in Liberia. In each EUV survey, five counties will be constantly visited, and five other counties from the rest of the ten counties will be visited on a rotational basis. Therefore, 10 counites are selected in each EUV survey.	EUV is conducted in GHSC-PSM intervention areas (Kayes, Koulikoro, Sikasso, Segou, Mopti regions and the district of Bamako). Stratified sampling used to ensure that each type of facility at each level is represented. Parastatals were selected only in Bamako district. CSCOM was selected based on random sampling. If a structure is not accessible due to road or security conditions, it can be replaced by an accessible structure with the same characteristics.	Data are collected quarterly in all provinces;Two rural district + one urban district (provincial capital) are selected from each province; The first rural district is selected randomly; The second rural district is selected based on proximity with the first one (due to logistic and road issues); The urban district is always included; Within each rural district: One District Warehouse is selected and the most relevant reference health facility or rural hospital is always selected; One health peripherical center are randomly selected ; Within each urban district: One Provincial or distritral Warehouse is selected and One provincial or central hospital is always selected ; One health center is randomly selected	Due to the large number of health facilities in the country, sampling is carried out only in PMI-focus States. A mix of random and purposeful sampling, stratified along facility type (i.e. secondary and primary level facilities).	Plan for EUV in Q3: Multiple level stratified random sampling in the two selected regions. The sites were selected based on their probability proportional to size (PPS) sampling.	Multiple level stratified random sampling (by malaria burden, 2 districts randomly selected per province then predetermined number of facilities selected at random by service delivery level (HP, HC, Hospital) quarterly. Malaria burden categories (groups) 0-5; no provinces under groups 0 and 2. HFs sampling: Group 1 (Lusaka and Southern; 10 HFs per province), Group 3 (Copperbelt, Central, Eastern, Luapula, Northern and Muchinga; 48 HFs), Group 4 (Northwestern and Western; 22 HFs).	Multi-level, stratified random sampling (by malaria burden, by district by facility) across the provinces biannually. Sampling incorporates a malaria burden approach (i.e. elimination, low transmission and high burden districts). High/medium burden districts are given a higher weighting than the low transmission and elimination areas when sampling. 160 treating facilities are randomly selected across the country per year.
Changes in methodology	Yes, largely in sample size selection to ensure inclusion of the 6 PMI-supported provinces in all EUV (ie 6 of the 10 selected provinces are the PMI-supported provinces). Luanda, the capital city will also be included in all EUV. The remaining 3 provinces will be selected with NMCP guidance based on established NMCP criteria (malaria prevalence and delay in submitting malaria reports).	None	None	None	None	Standardized survey questionnaire with optional additional country specific modules; frequency and timing of data collection (bi-annually); sampling strategy; change in survey package – SurveyCTO, new standard manual.	None	The project implemented a new methodology on End-Use Verification (EUV), which included the following new elements: - Use of an updated and standardized questionnaire -Use of an updated sampling method to ensure national representativeness and increased accuracy - Training of data collectors using an updated and standardized curriculum. - Using SurveyCTO via mobile devices and synchronizing data in a central repository, which will allow automated analysis and better project access to raw data.	New methodology in place since FY19Q2.	None	None	Temporally switched to bi-annually in first half of FY18 then back to quarterly in second half. Switched from Magpi to SurveyCTO in August 2018. Included MNCH in FY18Q4 round. FY19 Q1 data will be collected from 80 sites, Q2-Q4 will reduce to 40 sites.	Stratify districts based on malaria burden into three categories (high/medium burden, low burden, and elimination areas) based on annual malaria incidence.
Numbers of SDPs and warehouses visited in FY19 EUV surveys	313 (8 provincial and 27 municipal warehouses; 8 provincial hospitals; 36 hospitals municipal hospitals; 104 health centers; and 127 health posts	80 SDPs, 48 District warehouses; 8 CAMEG Regional	88 (14 warehouses: 1 national central medical store, 1 PSI's LLINs warehouse, 12 district's pharmacies; and 74 SDPs including 12 district's hospitals and 62 health centers)	Aug 2018: 112 sites (5 Regional Hospitals, 10 District Hospitals, 11 Sub-divisional Hospitals, 77 Integrated Health Centers, and 9 other type of facilities)	90-120 SDPs and 14 -17 warehouses	Approximately 100 – 120 facilities twice a year	169 facilities and 9 county depots	86 service delivery points (SDPs) and 29 warehouses	108 facilities per quarter	110 every cycle; and 220 yearly, no warehouses	58 Service delivery points ,2 district warehouses and 2 regional hospitals	80 sites visited in Q1, 40 facilities visited in Q2-Q4; in total 200 sites completed in FY19 (levels - Health Post, Health Center and Hospitals)	Last EUV visited 72 facilities.
Software used	SurveyCTO	SurveyCTO	FY19: paper based tool for data collection, SPSS for data analysis.Note that SurveyCTO will be used for the next round EUV data collection .	SurveyCTO	Collected using SurveyCTO. Data are vlidated, cleaned and analyzed using Excel.	SurveyCTO	SurveyCTO	Data collection and validation with SurveyCTO cleaning and analysis with SPSS and Excel	Collected using paper-based tool then entered into Excel. Data are validated, cleaned and analyzed using Excel	SurveyCTO	SurveyCTO	SurveyCTO	SurveyCTO

	Angola	Burkina Faso	Burundi	Cameroon	Ethiopia	Ghana	Liberia	Mali	Mozambique	Nigeria	Niger	Zambia	Zimbabwe
Formal agreement with MOH/NMCP regarding data ownership?	PMI is the sole data owner for the EUV activity. At the end of each activity the report is shared with stakeholders involved at all levels.	There is no formal agreement with the NMCP regarding the EUV data. Although the project hosts the activity and database, the NMCP has ownership of the data.	There is no specific agreement with the NMCP regarding EUV data but the NMCP include EUV exercise in their annual work plan. Currently GHSC-PSM owns the raw data as it is received from facilities. The project also generates the reports using PMI template and Burundi MOH template .GHSC-PSM in collaboration with NMCP disseminates the report with other stakeholders.	No specific "agreement" with MOH/NMCP as all activities are discussed and validated between PMI and NMCP before MOPs is approved. NMCP has no formal ownership of data but are conducting data collection. They involve in the data analysis and have access to the data base.	No formal agreement but, the report is shared for FMOH to take actions.	No formal agreement exists with NMCP regarding ownership of data. However, report is shared with stakeholders and GHS/MOH counterparts.	No formal agreement exists with NMCP regarding ownership of data. However, the project provides technical support to the activity, hosts the database and share the report with stakeholders and MOH counterparts.	No formal agreement with MOH/NMCP regarding data ownership. NMCP is the lead of the overall the implementing process (from planning to results dissemination).	No formal agreement currently. As the data is collected through routine supervision activities, the data belongs to MoH.	There is no formal agreement with the FMOH/ NMEP regarding the use of EUV data; its ownership and use is determined by USAID. The government disseminates the report at national and state PSM sub-committee meetings.	There is no formal agreement with the PNLP regarding the ownership of the data. However, the report is shared with the MS stakeholders and peers.	There is no standing formal signed agreement. The Project conducts and reports data to NMEC & PMI.	Currently there is no formal agreement with MOH/NMCP regarding ownership of data but the project generates the report which is shared with NMCP and other various stakeholders.
PMI involvement	Fully involved. Provides 100% of the budget.	USAID PSM activity manager participates in EUV preparation or training sessions and presentation of the EUV reports to stakeholders and partners.	USAID /Malaria Specialist contribute to EUV preparations and recommend that data must be collected at community level .He also participated the EUV workshop results dissemination.	PMI Advisor reviews TOR and reports, contributes to issues identified and follow up discussions with EUV findings.	PMI/USAID have clear information and support for EUV and the reports are shared with them.	PMI advisor informed about activity and provided with reports. Advisors contributes to issued identified and follow up discussions with EUV findings.	Fully involved and covers 70% of the EUV cost.	TOR and results shared with the PMI advisor. He participates in the review of the EUV report.	The PMI advisors receive and review EUV reports.	PMI Nigeria approves the work plan, reviews the EUV report and provides feedback for revision and areas of improvement.	The USAID PSM activity Manager participates in the EUV preparation or training sessions and the presentation of EUV reports to stakeholders and partners.	PMI guides the surveys. PMI prescribed the frequency changes and the sample reduction for FY19. FY20 we will switch to biannual with number with planned 100 - 120 sites per cycle.	PMI advisors participated in the review of the survey questions, sampling of facilities, data collection and analysis.
Level of follow-up	At the end of each EUV visit, a debrief and recommend-dations are made at each site. If a province selected in the previous exercise is selected in the following exercise, the team must ensure that those recommendations were applied.	Findings are discussed with NMCP, at the National Health Committee procurement coordination committee and other meetings. The findings are share with secretariat general of MOH for decision making.	After data analysis, EUV results are shared and validated by EUV technical steering committee. Recommendations and key corrective actions are shared with stakeholders during the results dissemination meeting.	At the end of each visit, a debrief and recommendations are made to each site. The districts and regional departments are equally debriefed and encouraged to do follow-up of the recommendations made to sites. Monthly and quarterly supportive supervision exercises are used to follow-up the implementations on malaria case management and stock management.	Immediate refill and/or redistribution by the EPSA Hub, if there is/are stock out/ overstock. Also, the data are used to provide technical support for skills and knowledge gaps at the SDPs and EPSA.	Dissemination of EUV findings with program and key stakeholders to address identified supply chain gaps including human resource and capacity building to improve efficiency and commodity security.	At the end of each EUV survey, a debrief is made at each county, and the MOH counter part responsible for each recommendations in the report is supported or engaged for implementation before the next EUV survey.	During EUV visits, redistribution of commodities is made between overstocked and understocked/ stocked out facilities. Recommendations are followed at all levels, issues are discussed in central and regional meetings. There is continuous communication among regional health directorates, health districts, PPM (Medical store), and NMCP to improve availability of products.	Follow up training and supervision efforts have focused on issues such as managing and updating stock cards; improving physical examination, diagnostic and clinical data logging; correct use of mRDTs; and correct first-line treatment of severe malaria.	Follow-up actions and strategies are discussed at regular malaria stakeholder meetings (National and State PSM meetings, and National Malaria and State Malaria Technical Working Group meetings). Recent major focus is to ensure stock availability in the pipeline; improving record keeping, both in stock management and malaria case management, providing stock cards at facilities lacking them.	Findings will be shared with the NMCP, USAID/mission, and USAID/W. The findings relating to case management and inventory status are monitored through routine visits. The redistribution of stocks and the on-site orientation are done during the exercise. Other issues requiring intervention by the Ministry of health are entrusted to DHO, the OSP and the NCTC.Follow up actions are under NNMCP Leadership and will be discussed during stakeholders' meetings at central level.	Case Management and Stock status findings are followed up through routine TSS visits. Stock redistributions and onsite orientation is done during the exercise. Other issues requiring MoH action are handed over DHO, PHO and NMEC.	With knowledge of stock outs, redistribution and immediate delivery of commodities to affected facilities takes place. Management level discussions regularly occur among key stakeholders regarding how to better supply facilities and manage malaria cases in the long term.
Cost of EUV, including PMI's percent contribution and coverage of software	The 1st EUV for FY19 was around $68,000. The 2nd EUV for FY19 was approx $80,000. Cost was 100% PMI	$26,713 for one survey in FY2019	($58,319) for one survey in FY2019	1st Semester FY 19 (Oct 18 – Mar 19) : $4,680.87; 2nd semester FY 19 (Apr 19 – Sep 19) $46,626.45. Total: $51,317.32	Around 20,000 USD semi-annually. The number of sites covered are 8 EPSA warehouses, 33 Hospitals and 45 health centers. There is no software used	Cost: USD 67,560. PMI contributes 33% of total cost	$84,362 for the 2 surveys conducted in FY19	$50,190 semi-annually: -$30,445 for training and data collection -$8,215 for data analysis -$11,530 for results dissemination workshop	$ 50,329.72 for EUV + Supervision per quarter, with TO2 contributing 23.35%	$45,005.53 per quarter for the training and field activity only. PMI contributes 100% of the cost.This cost does not include the LOE by staff for data collation, cleaning, analysis and reporting	Approximately $29,035.40 in FY19. 100% of which was contributed by PMI	Approx. $44, 747.07 annual expenditure for field collection	Grand total of $77,904 in FY2019; 100% contributed by malaria task order
Other organizations or projects providing funding for EUV	GHSC-PSM TO2 fully fund the EUV. No other organization or project provide funding for EUV	100% TO2 funded MoH/NMCP provides 80% of the vehicles for data collection	None; 100% GHSC-PSM TO2 funded	None; 100% GHSC-PSM TO2 funded	Costs are split between TO2 (75%) and TO4 (25%)	Cost is split between TO2 (67%), TO3 (29%), and TO4 (4%)	GHSC-PSM fully fund the EUV with TO2 (70%), TO3 (15%), TO4 (15%)	Cost split: 60% TO2 and 40% TO4; MOH staff participate in data collection and report dissemination	Cost split: TO1 (36.75%); TO2 (23.35%); TO3 (20.90%); TO4 (19%)	Costs are split between TO2 (50%), TO4 (50%)	TO2 (100%)	TO split: TO2 (75%), TO4 (25%). No other organization or project provided funding for EUV	100% TO2 funded. No other organization or project provide funding for EUV
Follow up funding needed?	No follow up funds required for EUV activity but may be required to support post EUV issues and identified action plans to facilitate continuous improvement.	None	Yes follow up fundings are required to address recommendations and corrective measures formulated by the EUV report.	EUV funding available	Follow up of feedback and gaps identified during data collection is addressed with regular supervision. It doesn't require separate/ additional funding.	No follow up funds required for the EUV activity itself. However, funding may be needed to address gaps/issues identified post EUV.	Some of the follow up activities are being rolled into FY20 work plan to provide hands-on mentoring to some of the health facilities. Requirements around infrastructural support not on GHSC-PSM budget.	EUV funding available. No need for follow up	No follow up funds are needed at this time	None	None	N/A	There is no follow up needed for EUV funding itself but follow up is needed for activities identified during EUV.

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Other organizations or institutions involved in EUV	National Directorate of Medicines and Equipment, NMCP, General Health Inspection	NMCP, Family Health department. Access to Health products, CAMEG	WHO and key MOH institutions (DPML, CAMEBU,PNILP) DSNIS,DPPS,IGSSLS) are members of the technical committee.	MOH at Central and peripheral levels. Central: NMCP, Directorate of Pharmacy, Medicines and Laboratory (DPML) and Directorate of Disease Control, Epidemics and Pandemics (DLMEP). Peripheral: Coordinator of the Regional Technical Groups for NMCP and district focal point for NMCP.	FMOH/ NMCP, RHBs and EPSA	MOH , GHS, NMCP	The NMCP, Family Health Division (FHD) and the Supply Chain Management Unit (SCMU)	Ministry of Health and Public Hygiene (MOHPH) through NMCP. Regional Health Directorate team participate in EUV data collection and results dissemination. Health district team attend results dissemination meeting.	MoH provides data collectors for EUV and supervision for each quarter	• National Malaria Elimination Program (NMEP) / FMOH • SMOH across the 11 PMI focus states PMI Treatment Partners: • Integrated Health Program Nigeria (IHP-Nigeria) • PMI-4-State (PMI-S),another partner, plans be part of the next EUV survey	Ministry of health through the PNLP	Ministry of Health at PHO and DHO level and National (NMEC); some provinces have joint visits with PAMO.	Ministry of Health Child Care (MOHCC) NMCP, Directorate of Pharmacy Services, Provincial Pharmacy Managers and Provincial Epidemiology and Disease Control Officers participated in EUV training and tool development; data collection, and discussions of findings.
Other products included in survey	None	Iron + Folic acid	None	None	MNCH	FP and MNCH	FP and MNCH products	MNCH, FP	HIV, RH, NMCH and Nutrition. In total, data for 37 products is collected	MNCH	None	MNCH (twice per year)	Only malaria commodities
Other information	None	None	None	None	MNCH case management, and reporting, supervision, and training on RMNCH	None	None	None	None	None	None	None	CHWs
Does EUV collect data on LLINs & folic acid?	LLINs only	Yes	LLINs only	Yes	No data is collected for (LLINs) and Data is collected for folic acid	Yes	Yes	LLINs only	LLINs only	Yes	Yes but LLINS only	LLINs only (stock on hand data), Folica acid, ORS, Zinc sulphate, Ferrous sulphate, Oxytocine when collecting data for MNCH	Yes. They now report on Ferrous Sulphate 60mg + Folic Acid 0.4mg tablets (tablet)